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A Contribution to the Study of  
Writers' Self-representation:  
Visible Researchers, Invisible  
Writers, or How to Make Medical  
Electronic Popularizations  
Trustworthy

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**Universidad**  
Zaragoza

Tesis Doctoral

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**UNIVERSIDAD DE ZARAGOZA**

Filología Inglesa y Alemana

2014



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Self-representation: Visible Researchers,  
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*Doctoral Thesis*

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Filología Inglesa  
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**Universidad Zaragoza**

*Plan de Estudios de Doctorado EEES (R.D. 56/2005)*

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Febrero 2014  
Zaragoza, España

## ACKNOWLEDGEMENTS

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I would like to begin by expressing my deepest gratitude to my supervisors, Dr. Rosa Lorés Sanz and Dr. Ignacio Guillén Galve, whose unwavering support and encouragement has enabled me to complete this dissertation. I am indebted to Dr. Lorés for her invaluable revisions and suggestions, as well as her continuous guidance and reassurance. I truly appreciate all the help she has provided in every possible aspect of my research. I am indebted to Dr. Guillén for arousing my interest in Morphosyntax and medical English and for introducing me to tertiary teaching education. His help throughout the whole process has been of immense value. To both of them, I attribute my professional and academic progress since I commenced my degree in English Studies in 1998. Be it on a professional level or on a personal level, I have the utmost respect and admiration for both Dr. Lorés and Dr. Guillén.

I would also like to express my immense gratitude to Professor Ignacio Vázquez Orta for inviting me to join the InterLAE research group, and to the rest of the group members for their constant support and encouragement. I am particularly grateful to Pilar Mur and Silvia Murillo for their personal support and academic help, and to M<sup>a</sup> José Luzón for her insightful suggestions on the sections on genre relations and electronic genres.

I would also like to thank Dr. José Manuel Sánchez Zalabardo for helping me to gather information prior to the compilation of the corpus itself, and for introducing me to informants at the University of Zaragoza Faculty of Medicine. His guidance and explanations were crucial. Moreover, I thank all the anonymous informants who kindly participated in the survey-based study.

From a professional perspective, I am grateful to the Jesuits School, the University of Zaragoza, and above all, to the *Centro Universitario de la Defensa de Zaragoza*, for allowing me to allocate my time to my research as I saw accordingly.

From a personal perspective, my thanks go to my colleagues at the *Centro Universitario de la Defensa*. To Pedro Satústegui, my other Pedro, Felipe, Pablo, Nila, Teresa, Laura and to Teresa and Sergio and Jesús y Angelines, I am truly indebted. They have been a constant source of inspiration for me.

My warmest thanks go to my devoted parents for their encouragement, enduring love and never-ending patience. I also thank my beloved sisters, Mari (a second mother) my nephews and nieces and my brothers-in law for their moral support. So, to all the people I love, have always loved, and will always love: Thank you very much!

*A mis padres*





# TABLE OF CONTENTS

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ACKNOWLEDGEMENTS.....	III
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## CHAPTER 1

GENERAL THEORETICAL BACKGROUND.....	1
1.1 INTRODUCTION.....	3
1.2 GENRE STUDIES .....	14
1.2.1 Approaches to genre studies.....	14
1.2.2 Genre relations .....	20
1.2.3 An introduction to EAP, the discourse of science and discourse communities .....	26
1.2.4. Evolving genres and evolving theories: approaching Med-E-Pops ..	33
1.2.5 Electronic genres.....	38
1.2.5.1 <i>Digital or electronic genres</i> .....	38
1.2.5.2 <i>Language and the Internet</i> .....	47
1.3 MEDICAL POPULARIZATION .....	49
1.3.1 Problematising the nature and function of scientific popularizations	51
1.3.2 Medical Popularizations as Journalistic Reports .....	55
1.3.2.1 <i>The structure of medical popularizations</i> .....	59
1.3.3 Medical Popularizations as Web-Posted Accounts.....	66
1.4 CONCEPTUALISING VOICE .....	74
1.4.1 Ivanič's concept of the writer's identity .....	76
1.4.1.1 <i>Linguistic and textual features associated with writer's identity</i>	78
1.4.1.2 <i>Towards a conceptualisation of voice of the Med-E-Pop                 writer</i> .....	80
1.4.2 Discrepancy between academic conceptualisations of voice in applied linguistics.....	83
1.4.2.1 <i>The need to distinguish between stance and voice</i> .....	84

1.4.2.2 <i>Recent approaches to voice</i> .....	86
1.4.2.3 <i>Linguistic features associated with the expression of voice of Med-E-Pops writers</i> .....	91

## CHAPTER 2

CORPUS AND METHODOLOGY.....	101
2.1 DESCRIPTION OF THE CORPUS .....	102
2.1.1 Corpus collection.....	102
2.1.2 Brief description of the corpus.....	110
2.1.2.1 <i>Brief description of the Med-E-Pops corpus</i> .....	110
2.1.2.2 <i>Brief Description of the Med-E-RAs corpus</i> .....	114
2.2 ANALYSIS OF DATA .....	116
2.2.1 Approaches to interpret data .....	117
2.2.1.1 <i>Approaches to the study of generic relations between the Med-E-RAs genre and the Med-E-Pops genre</i> .....	117
2.2.1.2 <i>Approaches to the design of a contrastive genre analysis between Med-E-RAs and Med-E-Pops</i> .....	120
2.2.2 Approaches for the analysis of the concept of voice in Med-E-Pops..	123

## CHAPTER 3

DISCUSSION OF FINDINGS.....	143
3.1. CONTRASTING Med-E-RAs AND Med-E-Pops GENRES.....	144
3.1.1. Previous studies on genre relations .....	145
3.1.2. Contrastive analysis of Med-E-RAs and Med-E-Pops genres.....	150
3.1.3 Concluding remarks .....	172
3.2 ANIMATE AGENTS + ACTIVE VERBS.....	176
3.2.1 Animate agents + active verbs in Med-E-RAs .....	178
3.2.2 Animate agents + active verbs in Med-E-Pops .....	181
3.2.3 Concluding remarks .....	194
3.3 PASSIVE CONSTRUCTIONS .....	196
3.3.1 Passive constructions in Med-E-RAs .....	196
3.3.2 Passive constructions in Med-E-Pops .....	201
3.3.3 Concluding remarks .....	216

## TABLE OF CONTENTS

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3.4 ACTIVE VERBS WITH INANIMATE SUBJECTS OR ABSTRACT RHETORS.....	218
3.4.1 Active verbs with inanimate subjects in Med-E-RAs.....	218
3.4.2 Active verbs with inanimate subjects in Med-E-Pops.....	222
3.4.3 Concluding remarks .....	233
3.5 REPORTING SEQUENCES .....	235
3.5.1 Disguised writers' acts .....	237
3.5.2 Voice features in reporting verbs .....	242
3.5.3 Voice at a reporting discursal level (the purpose of constructing Med-E-Pops by citing others' voices).....	262
3.5.4 Concluding remarks .....	271
 CHAPTER 4  	
FINAL CONCLUSIONS.....	275
Summary of findings.....	275
Limitations and future research.....	300
 APPENDIX  	
APPENDIX 1: Pairs of Med-E-RAs and Med-E-Pops (titles, sources and dates of publication) .....	307
APPENDIX 2: Questionnaire distributed among medical participants for this survey-based approach .....	313
APPENDIX 3: Med-E-RAs and Med-E-Pops titles .....	315
APPENDIX 4: Distribution of reporting sequences per moves in Med-E-Pops corpus.....	319
REFERENCES.....	221



## GRAPHS

Graph 1. Graph based on John's (2005) concept of writers' identity .....	82
Graph 2. Graphical distribution of participants' answers to question number 2, "Do you read Med-E-Pops? .....	106
Graph 3. Distribution of informants' answers according the e-journals they read .....	107



## FIGURES

Figure 1. Askehave and Ellerup Nielsen (2005: 127). Visual representation of the two-dimensional genre-model .....	45
Figure 2. Cline of (in)visibility designed for the interpretation of the corpus .	98 y 126
Figure 3. Adaptation of the figure proposed by Martínez (2001: 233) regarding the resources for the representation of participants in relation to congruence and negotiability .....	125
Figure 4. Figure adapted from Thompson (2001) that gathers the linguistic constructions studied to analyse the data obtained from the agentless constructions analysis .....	212
Figure 5. Adapted from John (2005:193) figure on the writer's visibility through agency .....	214
Figure 6. Graphic transformation of Med-E-RAs lexico-grammatical variables in search of Med-E-Pops objectivity .....	234
Figure 7. Distribution of reporting verbs according to their frequency and writers' visibility projection .....	254
Figure 8. A graphic representation of the Med-E-Pops writers' visibility based on reporting data interpretation .....	261
Figure 9. Adapted from John's (2005: 132) approach to writers' visibility through reporting .....	268





## TABLES

Table 1.	Classification of types of scientific discourse taken from Loffer-Laurian (1983: 11) .....	30
Table 2.	Summary of Ivanič's ideas when dealing with identity from a sociological viewpoint and subsequent research questions related to this thesis .....	77
Table 3.	Studies focused on linguistic and textual features which contribute to the construction of authorial identity .....	79
Table 4.	Hyland's table on the most frequent hedge realisations and their functions (1998: 186) .....	96
Table 5.	Oliver's (2004: 181) taxonomy for the study of rhetorical attenuation in medical discourse .....	97
Table 6.	Percentage of junior/senior medical participants .....	104
Table 7.	Number of practitioners classified according to their medical speciality and percentage over the total number of participants .....	105
Table 8.	E-journals suggested by medical informants, number of answers and the correspondent number of Med-E-Pops chosen to select the Med-E-Pops corpus .....	107
Table 9.	Names of the e-journals and the research journals these Med-E-Pops reported on .....	109
Table 10.	General characteristics of each e-journal publications.....	113
Table 11.	Impact factor of the journals at the time of Med-E-RAs publication (2009) .....	115
Table 12.	Summary of genre relations' main tenets applicable to this methodology followed in this dissertation .....	119

Table 13. Results of the manually scanned contrastive process of the Med-E-RAs move structure and communicative purposes with the Med-E-Pops information structure and communicative purposes .....	156
Table 14. Move relationship between Med-RAs and Med-E-Pops according to the information structure and communicative purposes of each move .....	163
Table 15. Lexico-grammatical features studied. Total number of tokens and normalised results per 1,000 words .....	177
Table 16. Use of pronouns as authorial markers. Total number of tokens and normalised results per 1000 words .....	179
Table 17. Med-E-RAs lexico-grammatical structures transformed into noun phrases that refer to researchers in Med-E-Pops (total number of tokens, percentage and normalised results per 1,000 words) .....	184
Table 18. Use of noun phrases in Med-E-Pops referring the Med-E-RAs authors. Total number of tokens, normalised results per 1000 words and percentages of the total of nouns frequency .....	189
Table 19. Total number of processes that followed the noun phrases normalised per 1,000 words and percentage over the total number of instances .....	193
Table 20. Passive constructions Med-E-RAs and Med-E-Pops contrastive results .....	201
Table 21. Passive constructions results in the Med-E-Pops corpus .....	202
Table 22. Classification of passive constructions with agent results .....	203
Table 23. Distribution of agentless passive constructions according to communicative purpose of their implicit agent .....	207
Table 24. Distribution of tokens normalised per 1,000 and percentages according to the visibility of the implicit agents .....	211
Table 25. Use of abstract rhetors in Med-E-RAs. Total number of tokens, normalised results per 1,000 words and the representing percentage from the total amount of abstract rhetors in the Med-E-RAs corpus .....	218
Table 26. Use of abstract rhetors in Med-E-Pops. Total number of tokens, normalised results per 1,000 words and percentage .....	222

Table 27. Lexico-grammatical realisations used in Med-E-RAs that became abstract rhetors in the corresponding Med-E-Pops (total number of tokens, percentage and normalised results per 1,000 words) .....	228
Table 28. Use of abstract rhetors in Med-E-RAs and Med-E-Pops. Total number of tokens and normalised results per 1,000 words .....	234
Table 29. Med-E-Pops that include voices other than the researchers' or writers' and its source of publication/E-journal .....	241
Table 30. Distribution of reporting tokens according to tense and Med-E-Pop number .....	243
Table 31. Total number of instances direct and indirect projections per moves and normalised per 1,000 words .....	245
Table 32. Frequency of the most representative reporting verbs in Med-E-Pops .....	248
Table 33. Distribution of reporting verbs according to their frequency and potential meaning .....	253
Table 34. Classification (tokens) of the verbal acts that denotes the responsibility of the source text authors and their presence in the resulting Med-E-Pops .....	256
Table 35. Classification of the verbal acts that evaluates how the author is reported and tokens .....	258
Table 36. Classification and total number of tokens normalised per 1,000 words of the verbal acts that evaluate the writers' opinion towards the information conveyed in Med-E-RAs .....	259
Table 37. Classification of verbs from the writers' interpretation angle and frequency in raw numbers and normalised per 1,000 words .....	260
Table 38. Raw numbers and normalisation per 1,000 words of reported information attitude .....	262



# CHAPTER 1

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## GENERAL THEORETICAL BACKGROUND

Increasingly, we all, as lay readers, turn to the Internet to check medical information. The availability of information that is sometimes reliable and many times misleading has led lay readers to look for medical research articles published on the net (hereafter Med-E-RAs). These Med-E-RAs are usually written in English by native and non-native speakers of English. However, these Med-E-RAs are designed to be accepted by members of the same discourse community. That means that *outsiders* may not understand them. Besides, newly published Med-E-RAs on the latest medical research are not free access publications. Only members of research communities or institutions that are registered in the electronic versions of medical journals have access to these Med-E-RAs. This situation has led prestigious newspapers—like the New York Times, hospitals and health care institutions—like Johns Hopkins Hospital—to design reliable adaptations of the latest medical research articles (hereafter Med-RAs) and to publish them on their on-line versions.<sup>1</sup> These electronic popularizations or adaptations,<sup>2</sup> which are labelled in this piece of research as medical electronic popularizations (hereafter Med-E-Pops), build trust among their potential

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- 1 It should be noted here that what I have labelled as Med-E-RAs differ slightly from Med-RAs. The popular texts under study were labelled Med-E-Pops because medical RAs corpus was obtained from early versions available on line. Therefore, the letter *E* aims to make that distinction and in this acronym that letter relates to the premodifier; “electronical”. This is the reason why sometimes the acronym Med-RAs and Med-E-RAs can be read in this dissertation. Sometimes reference is made to the genre of medical research articles—Med-RAs—and in other situations I make specific reference to medical research articles first accessed for this corpus on line—Med-E-RAs.
  - 2 The spelling of the word *popularization* chosen by this dissertation is with the letter *z* instead of *s*, since from the beginning of my research on this issue the latest contributions to literature use that spelling. The spelling with the letter *s* has been respected in quotations from other researchers who at the time chose to spell the word with an *s*.

readers thanks to their objectivity and scientific rigour. To my understanding, this new genre, the result of the development of journalistic scientific popularization and electronic genres, gains neutrality when reporting Med-RAs information, by engaging their readers through a writers' devoicing mechanism. Therefore, this research is a contribution to the study of the concept of *voice* in recent medical popularizations published on line.

The different points of view adopted by researchers about its definition, its realisation, its pedagogical implications or even its applicability, for instance, to the field of English for Academic Purposes (EAP) have led scholars to conduct insightful linguistic studies. Their findings cast light upon unexplored areas in applied linguistics such as the implications of voice in specialised texts. Specifically, in this study I wished to observe how the voice of Med-E-Pops writers is crafted, constructed or created in texts that traditionally have been used by different discourse communities. These medical texts, potentially designed for a lay international Internet audience, all seem to have very similar rhetorical conventions as well as linguistic choices. These rhetorical choices may firstly reveal a recent conventional homogenisation of the Med-E-Pops genre across the web. Moreover, the recurrent use of some lexico-grammatical constructions points to a potential conscious construction by Med-E-Pop writers of an almost unnoticeable voice that stands back to give the floor to the voice of Med-E-RAs. The blurring of the voice of the Med-E-Pop writer builds trust in the medical research portrayed in Med-E-Pops and therefore in the Med-E-Pops genre as a reliable vehicle for medical knowledge dissemination.

As this research aims to contribute both to the study of genre and to the study of voice, I have divided this theoretical review into three parts in order to guide the reader about the rationale behind this piece of research. The first part of this chapter opens with an introduction to those general traditional studies in the field of applied linguistics that frame this study. From a general discussion of the growing interest in health science news, this section proceeds to deal with the implications of the external situation of text production and the relationships between power and language, such as in critical discourse analysis and in corpus linguistic studies, since this study uses corpora to study the Med-E-Pops genre and its rhetorical choices for voice. It then incorporates some of the main tenets of systemic functional grammar applicable to the research aim of this dissertation in order to cast light on how meanings can be mapped in Med-E-Pops. The last indispensable aspect on which this first part of the chapter focuses is genre studies and genre relation studies. It continues with

a revision of the core tenets related to genre studies in EAP and a revision of evolving theories in genre studies. The section closes with a review of electronic genres studies. Part two focuses on the state of the art in medical popularizations, which is the specific genre this dissertation aims to study. It opens with a review on how medical knowledge could be disseminated outside academia in the form of medical popularizations. This part continues with an overview on these popularizations as journalistic versions and as web-posted accounts. The final and third part of this chapter contains a review of the debate about the academic conceptualisations of voice in applied linguistics. This third part and hence the literature review itself finishes with an introduction to my interpretation of the voice of writers in Med-E-Pops.

## **1.1 INTRODUCTION**

In the field of journalism many studies have explored the journals' and audiences' rising interest (c.f. Nelkin 1990; Fayard 1993; Hornig 1997; Rogers, Friedman and Dunwoody 1999; Bucchi and Mazzolini 2003 or Illman 2006 to name a few) about how scientific and technological findings are transferred to and published in non-specialised journals. Specifically, in the last three centuries there has been a growing interest in health news (Gil-Salom 2000). For instance Polino (2008) states that in South America the spread of health news is receiving even greater interest than R+D journalistic articles published in ordinary newspapers. This study was conducted in four different Latin American countries (Brazil, Argentina, Costa Rica and Colombia) and with twelve well-known newspapers. Polino concludes that the newspapers' publishing trend is changing and that 51.9% of the scientific articles published in the media deal with health issues whereas the percentage devoted to R+D is decreasing each year (48.1% in 2004 and 2005). These articles related to health care, whose main aim is to disseminate medical knowledge, are known as medical popularizations. A considerable amount of literature has been published on the genre of popularization as adaptations of research articles (RAs) for lay readers. There is a large volume of published studies describing the role of popularizations in different fields. For example, several studies have attempted to explain the role of popularizations in the field of sociology (LaFollette 1990; Evans and Horning 1995), journalism (Jacobi and Schiele 1989; Dornan 1990) or applied linguistics (Myers 1989a; Nwogu 1997; Giannoni 2008) among others.

This widespread interest on the role of popularizations has been fed by the appearance of the Internet as the new medium for knowledge dissemination



among lay people. So far however, there has been little discussion about the popularizations published on the Internet as a response to a global social *need-to-know*. Owing to the accessibility of the World Wide Web, lay readers who need to know about medical issues turn to Med-E-Pops. One may wonder how a global audience comes to read and trust in Med-E-Pops instead of just “Googling” whatever they may be looking for. However, this social interest related to looking for comprehensive medical information on the Internet is being encouraged not only by doctors, as I will discuss in Chapter 2, but also by institutions. This growing practice is even triggering companies to modify their marketing policies. Among other businesses Boots, the English pharmacy company, has recently launched a website (<http://www.webmd.boots.com/>)—after WebMD and Boots joined forces to create a highly attractive health and wellness site for the UK audience. On the main page several symptoms are shown by using expressive and pedagogical audio-visual aids, which attempt to lead the reader to the cause of his or her potential malaise, discomfort or illness.<sup>3</sup> Another example of how websites are being designed to accommodate readers’ needs regarding health news is the website created in Europe for the 2009 flu pandemic by the *European Centre for Disease Prevention and Control* (<http://www.ecdc.europa.eu/en/Pages/home.aspx>). Kuteeva and McGrath’s (2012) study on this website raises concern about the emerging interest in research on web-mediated knowledge dissemination. These scholars pose research questions about the kind of discourses, genres or even the *European English* used by these electronic publications to build trust among potential readers and Internet users. Kuteeva and McGrath (2012) also point out that the fact that English is infiltrating the popular domain is becoming increasingly difficult to ignore.

Hyland (2010) conceives scientific popularizations as top-down RA processes that adapt scientific information, form and content, in order to make scientific information understandable to a wider audience. These popularizations respond to lay readers’ *need-to-know*, which directly affects the journals’ *need-to-publish* and *need-to-communicate*. That is, if journals want a larger audience to buy their publications or visit their online versions, these journals have to meet their readers’ expectations and needs. While a variety of studies have focused on

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3 This web site is certified by the Health On the Net Foundation (<https://www.healthonnet.org/>). This foundation (HON) certifies the validity of the scientific content displayed on the web site.

the research of communication in different settings,<sup>4</sup> the focus of this piece of research, in my understanding, should be on how and why medical knowledge is being communicated. With Brown and Yule (1983) we cannot ignore the fact that every linguistic expression aims to communicate. McCarthy (1994) adds that we should not disregard the fact that the cultural and social context in which discourse takes place also affects communication. This piece of research, by going beyond the text, aims to explore whether the genre of medical popularizations published on the Internet has evolved due to public demand and therefore whether we can really consider Med-E-Pops genre as a member of a genre constellation, colony, repertoires, etc. Therefore, in agreement with Hatch (1992), this section focuses on the existing connections between the language we use to communicate, the society we live in and the people that surround us. It cannot be denied that there are external and sometimes contextual—powerful forces—that manipulate discourse in order to carry out specific communicative intentions. This reflection made me wonder whether Critical Discourse Analysis (CDA) studies could cast light on the potential existence of promotional, commercial or political interests that may have inspired the creation of Med-E-Pops in order to manipulate readers' opinions on some health issues.

Who decides which Med-E-RA should be adapted, who carries out this adaptation or how to decide if the writer—the specialised journalist or doctor who adapts these texts—should agree or not with the versioned Med-E-Pop are some of the questions that at the macro-level directly affect the products, Med-E-Pops, that comprise the Med-E-Pops corpus under study. All these research questions point towards the need to take account of CDA in order to cast light on the analysis and later interpretation of the issue of the voice of the Med-E-Pops writer. In my opinion, the application of CDA to the study of Med-E-Pops can provide an answer to the important question of whether Med-E-Pops are *balanced texts* or not. Do they manipulate the reader from an ideological standpoint? Are they intended to create social change, or do they simply cater to public demand for medical information? In terms of CDA, Med-E-Pops could be

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4 Studies related to communication have been carried out from a variety of perspectives: A sociological perspective in its social setting (Hymes 1964), language as a social action under the umbrella of linguistic philosophy (Austin 1962, Searle 1969 or Grice 1975), classroom language interaction and management (Sinclair 1972), communicative purpose (Candlin *et al.* 1981), language acquisition (Widdowson 1979), communicative competence (Canale 1983), intonation and feedback in English as a Foreign Language classrooms (Hewings 1995), to name a few.

said to be aimed at triggering debate about the medical research carried out in their corresponding Med-RAs. But what if they simply report on the study that has been conducted while avoiding any kind of manipulation? Finally, CDA may also be suitable for investigating whether Med-E-Pops are the result of Med-RAs' dominant discourse and whether, therefore, these electronic popularizations are used to satisfy lay readers' *right-to-know*.

CDA<sup>5</sup> has mainly focused on the concept of *critical discourse awareness* through a critique of those practices that sustain inequality as well on the need to bring social change into focus. In this connection but from a systemic functional framework, Martin and Rose (2002: 254) state, "we need to balance critique with Positive Discourse Analysis, so that our interventions must have good news to learn from as well as bad news to overthrow". However, as Slembrouck (2010) states, CDA's main goal is to raise awareness about the "ideological constitution of discourse practices and the naturalisation of power relationships in everyday conceptualisations and rationalisations of practice, and, an imperative so, in a way that brings social change into view" (2010: 252). This is no doubt reflected in the negative or manipulative intentions of certain discourses. As shown in Chapter 3, Med-E-Pops are balanced texts since they do not manipulate the reader from an ideological angle. Med-E-Pops do not create a social change but reflect and respond to public demand for medical information. In short, CDA deals with real-world language-related problems. CDA justifies this by means of language data analysis based sometimes on techniques from Systemic Functional Grammar (SFG), which enables CDA to identify problems in language use. This appreciation of the context of communication affords a fairly accessible understanding of the real-world language-related problem in its specific context. Coffin, Lillis and O'Halloran (2010: 95) go further, stating that:

[o]n the basis of a rich systematicity, critical discourse analysts are in a position to explain not only how certain use of language can maintain a *status quo* which, in effect, sustains the real-world problem, but also suggest ways to address the problem.

With CDA, there has been on-going interest in how texts position readers to view social and political events in a particular way or more specifically, in how CDA and appraisal tools can also be useful when analysing the construction of the reader's

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5 See seminal Fairclough's studies 1989 and 1992b for further reading.

positioning (see Coffin and O'Halloran 2010). A clear view of CDA as a method to analyse social scientific research in terms of social and cultural change is shown by one of its fathers, Norman Fairclough (1992a, b, 1993 and 1995), in his work on the Thatcher government. According to Fairclough and Wodak (2010: 81):

[C]DA is the analysis of linguistic and semiotic aspects of social processes and problems. The focus is not upon language or the use of language in and for themselves, but upon the partially linguistic character of social and cultural processes and structures. [...] CDA is by its nature interdisciplinary, combining diverse disciplinary perspectives in its own analyses, and being used to complement more standard forms of social and cultural analysis. [...] it could help develop a critical awareness of the discursive strategies of Thatcherism which might be one resource in struggles against it. [...] this follows from the fact that social and political changes in contemporary society generally include a substantive element of cultural and ideological change.

However, Med-E-Pops do not trigger debate about the medical research carried out in the corresponding Med-RAs; they simply report on the study that has been conducted while avoiding any kind of manipulation. Since according to Fairclough and Wodak (2010) CDA is concerned with social problems, CDA associates discourse with distinctive representations of social reality and constructions of social and political relationships and identities. Consequently CDA highlights the linguistic and discursive nature of social relationships of power in contemporary societies.<sup>6</sup> As regards how discourse constitutes society and culture, there is a reciprocal dialectal relationship between them, according to Fairclough (1992a), who points out that the most important aspect of this relationship is the power of discourse. He thinks that there are three broad domains of social life that might be discursively constituted, referred to as representations, relationships and identities. CDA argues that discourse does ideological work. And according to Fairclough (2010), ideologies are ways of representing and constructing society. Society reproduces unequal relationships of power, relationships of domination and exploitation.

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6 This is because power relationships are exercised and negotiated in discourse. For instance, Bell and van Leeuwen (1994) establish a close analysis of power relationships in political interviews and the media. They analyse how British interviewers generally control the way in which interviews begin and end, the topics, the angles they are tackled from, the time given to the politicians to answer and so forth. See also Mishler (1977); Lalouschek *et al.* (1990); West (1990) for further reading.

With this context in mind, one could think that Med-E-Pops are the result of Med-RAs' dominant discourse and that these electronic popularizations satisfy lay readers' right to know. In that sense many members of the CDA school (Duranti and Goodwin 1992, among others) reinforce the idea that for interpreting metaphors for instance it has to be assumed that discourses are connected to other discourses. Audiences and situational contexts may create different senses of understanding and comprehensibility. Therefore, readers can interpret a text differently depending on their background of emotions, attitudes and knowledge. However, Med-E-Pops writers manage to transfer meaning successfully and the devoicing of their voices may contribute to the objectivity and readers' comprehension of their texts.

As regards genre, Fairclough's (2003) conceptualises it as a social process and poses the concept of *genre* as a chain of texts. A change in genre is therefore portrayed in terms of how different genres are combined together. Interrelated events, represented in interrelated texts give birth to a chain of different genres. Besides, considering that, according to CDA, power relationships are therefore transferred to texts, we could wonder whether the Med-E-Pops, which are the result of a former link of the medical genre chain, are a public service and therefore whether medical knowledge is being democratised. On the other hand, it would also be reasonable to wonder whether the Med-E-Pop genre really intends to disseminate medical knowledge or to sell newspapers together with the products their publicity advertises online. It could be implied from the latter assumption that there might be some interest from powerful people in creating a kind of social impact through Med-E-Pops.

In general, Med-E-Pops, as the results of the Med-RAs simplification process, reach different types of audiences by homogenising and democratising medical knowledge within the scope of what I have conceptualised as the Med-E-Pops genre. The writer's voice, as shown in Chapter 3, simply reports with scientific rigour what has been done in the medical research without manipulating either the medical content or the potential audience interpretation. Therefore, Med-E-Pops are not an imposition from a power relationship intended to "colonise" or manipulate readers' opinions but simply disseminate medical knowledge outside the scientific community in a comprehensible fashion since Med-RAs are not conceived as a dominant discourse but as a specific discourse designed for specific audiences. Although CDA is based on the idea of critical discourse awareness and Med-E-Pops could be conceived as a potential tool for criticising and manipulating different aspects of health issues among lay people, it is only the

concepts and terminology used by CDA that enable me to reach the conclusion that Med-E-Pops are simply used to satisfy lay readers' right-to-know in a simple and accurate way.

Another potentially useful angle of analysis for the exploration of the concept of *voice* in Med-E-Pops could be *Corpus Linguistics* (CL). One of the main empirical scientific studies in applied linguistics, CL has been considered here in order to validate the selection of comparable and useable corpora carried out in this piece of research to empirically observe the concept of *voice* in Med-E-Pops. CL is not the methodology chosen for the study of the voice of Med-E-Pops writers. However, since the contrastive study—Med-E-RAs vs. Med-E-Pops—conducted in this dissertation to observe the concept of *voice* is based on the empirical analysis of Med-E-Pops genre and certain linguistic realisations, some applicable CL tenets have been reviewed below in an attempt to explain the justification of this study procedure.

As Flowerdew (2002b: 3) puts it, CL “is concerned with the collection, structuring and analysis of large amounts of discourse, usually with the assistance of computers”. Although the use of computer tools is essential for counting and data collection, the corpora collected to present this dissertation research includes questions that have been scanned manually to observe how the voice of the Med-E-Pops writers is projected and how this contributes to the objectivity of Med-E-Pops through the recurrent use of lexico-grammatical and textual features that will be interpreted later in Chapter 3. In a similar way and drawing on Sinclair’s (1991) work, Hunston and Francis (2000: 15) define CL “as a way of investigating language by observing large amounts of naturally occurring, electronically stored discourse, using software which selects, sorts, matches, counts and calculates”. The aim of CL is, then, to describe language in use by analysing texts or samples that are accessed through a computer.<sup>7</sup> In CL, not only empirical data are sufficient; it has been widely acknowledged that data and texts “require the intelligent analytical mind of the

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7 Biber *et al.* (1998) illustrate the very varied research questions that can be addressed following a corpus approach in applied linguistics. These can be organised into four different groups: the analysis of morphological features, the analysis of grammatical categories, the analysis of syntactic constructions, and the analysis of discourse. Hunston and Francis (2000: 15) outline the peculiarities of the data obtained from analyses within CL in relation to the data used with other linguistic methods: the data are authentic, are not selected on linguistic grounds, are systematically organised, and are not annotated from existing theories.

linguist who draws on knowledge of previous studies, on his or her own intuition as well as on observation of texts” (Johansson 1995: 19) to carry out linguistic analyses and draw pertinent conclusions from them. It is functional linguists, who view language as mainly communicative, by encoding communicative events, who carry out corpus analyses of language. However, CL has encountered criticisms, mainly from formalist linguists and more specifically from Chomskyan transformative-generative linguists, who are wary of the value of studying language in use and, more specifically, of taking the language that is actually used as the basis for building theories and grammars of language. However, as Mur-Dueñas (2007b) argues, the emergence of corpora has changed the way language is approached and analysed by applied linguists and it has provided more accurate and reliable descriptions of language use. For those who focus on the descriptive analysis of language in use, CL has opened up a new and broad path to investigate real language in an accurate reliable way. As acknowledged by Sinclair (1991) and stated by Tognini-Bonelli (2001: 86), “the analysis of corpus evidence has truly brought about a qualitative change in the description of language”. However, CL has also created a sense of discomfort, compounded by the ‘mechanical’ nature of the initial analysis by computer. The ‘messiness’ of corpus data, and the sense of loss of control in the face of numbers of words running into the hundreds of millions, is probably one of the most important factors which is holding some functional linguists back from using corpus analysis (Butler 2004).

CL is obviously based on corpus studies. There is not still an agreed definition of a corpus.<sup>8</sup> A rather broad and encompassing definition of what a corpus is nowadays is provided by Tognini-Bonelli (2001: 1-2):

[a] corpus can be defined as a collection of texts assumed to be representative of a given language put together so that it can be used for linguistic analysis. Usually the assumption is that the language stored in a corpus is naturally-occurring, that is gathered according to explicit design criteria, with a specific purpose in mind, and with a claim to represent larger chunks of language selected according to a specific typology.

In all these definitions it seems that the salient aspect is that a corpus is to be composed of texts or samples of texts (of any kind and of any length accessed in

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8 Many other definitions have been proposed by numerous scholars such as: Sinclair 1991: 171; Alvar Ezquerro *et al.* 1994: 9; Baker 1995: 226; Johansson 1998: 4; Meyer 2002: xi; Butler 2004: 150; among many others).

any way) that linguists analyse to try to answer their linguistic queries. However, corpora also present some limitations. Hunston (2002: 22-23) establishes four general limitations. First, the analysis of corpora offers frequency data about language but it does not give information about what is possible and what is not in that language; as outlined by Kennedy (1998) “[c]orpora cannot tell us everything about how a language works”. Second, we cannot accept as facts those conclusions reached after the analysis of a corpus, as this (although representative of a language or language variety) is restricted; hence only tentative deductions can be made. Third, the corpus provides linguists with evidence, examples, but nothing else; they need to be interpreted, as by themselves they provide no information. Finally, Hunston identifies as a limitation the decontextualisation of language items or chunks extracted from the corpus. In relation to this last point, it is believed that decontextualisation can be overcome when the analysis focuses on small-scale specialised corpora compiled by the same linguist who is going to carry out the analysis (Flowerdew 2004), as is the case in this piece of research.

It is acknowledged in CL theory that when compiling a corpus there are several crucial aspects that the linguist should pay special attention to, because “[i]ssues in corpus design and compilation are fundamentally concerned with the validity and reliability of research based on a particular corpus, including whether that corpus can serve the purposes for which it was intended” (Kennedy 1984: 60). The authenticity of the texts or sample, their representativeness in relation to the universe of language to be investigated and the size this corpus should have for the analysis to be valid and representative are of special interest. The growing interest in CL seems to be a consequence of the emphasis on language use that has arisen lately (Johansson 1998). Such an emphasis has led to a proliferation of corpora, which have been compiled in accordance with the type of linguistic research to be carried out. As stated by Flowerdew (2002c: 96), “[d]uring the last few years, the compilation of corpora has widened in two senses –much larger-scale, mega-corpora are now in existence [...]. In another sense, though, the field has widened to include the recognition of much smaller, specialised genre-based corpora”.<sup>9</sup> The latter would be the case for these dissertation corpora.

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9 Besides, specific research aims have led linguists to use already existing specialised corpora or to compile their own corpora. The number of different types of corpora that linguists can design to meet their research needs is wide—see for instance Sinclair (1991), Baker (1995), EAGLES (1996), Kennedy (1998), Tognini-Bonelli (2001), Corpora Pastor (2001), and Hunston (2002) and Mur-Dueñas (2007b).



The corpora compiled for the contrastive study of Med-E-RAs and Med-E-Pops could further be described as written—because this is not an spoken corpora; diachronic—due to their publication span of time; comparable—because Med-E-Pops are Med-E-RAs products; and specialised corpus—because these texts share the same generic and rhetorical features due to their similar background, which is medical discourse. A formal justification of this corpus gathering is included in Chapter 2.

As regards the different methodologies used when studying corpora, Tognini-Bonelli (2001) establishes an interesting difference between corpus-based and corpus-driven methodologies; she differentiates between them in the following terms: “[t]he corpus-based approach would start with a set of explicit rules [...] and would validate and quantify these statements using corpus data. [...] The corpus-driven approach builds up the theory step by step *in the presence of the evidence*” (2001: 17). Based on Tognini-Bonelli’s hypotheses, Butler (2004: 175) defines the corpus-driven approach as the “approach to linguistic investigation, which advocates the construction of descriptions and the building up of theory on the basis of what the corpus tells us, with minimal use of preconceived theoretical ideas”. Accordingly, results taken from a corpus can serve either to support a prior linguistic/rhetorical intuition (following a corpus-based methodology) or to discover particularities about a linguistic system (following a corpus-driven methodology). That is, whereas a corpus-based methodology is essentially deductive, a corpus-driven methodology is essentially inductive in that it is the corpus which reveals linguistic/rhetorical facts to the corpus linguist. In a corpus-driven approach the analysis of the corpus is prior to any theoretical statements; the linguist uses it as a source of evidence to build his or her theory. On the other hand, corpus-based studies use corpus data either “to illustrate and support the claims being made” (Butler 2004: 169) or “to base that description on actual usage rather than on invented examples” (Butler 2004: 175). Theoretical statements or descriptions of language in a corpus-driven approach derive from the evidence; they are not superimposed onto the evidence.

Since this study aims to reflect on the interrelation of the concept of the *voice* of Med-E-Pops writers and Med-E-Pops genre, a qualitative and multidisciplinary study is needed. A qualitative approach to this dissertation data requires broader analysis and therefore deeper interpretation of data in order not to overlook contextual variables that may affect the concept of *voice* in Med-E-Pops. Therefore, this small-scale corpus-driven approach to the concept

of *voice* in Med-E-Pops and to Med-E-Pops genre borrows some tenets from CL to ensure the construction of an empirical, representative and valid corpus. However, as mentioned above I have not used CL methodology because it may limit the formal and qualitative data interpretation.

Needless to say, in order to study the concept of the *writer's voice* in Med-E-Pops I have focused on the study of the most common linguistic realisations found in this corpus. The observation of these linguistic features associated with the concept of *voice* should allow this dissertation to interpret whether the voice of the Med-E-Pops writers is expressed in these electronic texts. Besides, exploring these lexico-grammatical structures in their context would enable me to interpret in Halliday's words what is "above, below and beyond" language (2004: 28).<sup>10</sup> Therefore to analyse the conscious devoicing process Med-E-Pops writers undergo when writing Med-E-Pops from Med-RAs, meaning must be mapped in order to make the invisible visible (Martin 2010) in order to "explain the relationship between what we say and what we mean, and understand, in a particular context" (Paltridge 2000).

To justify this study's theoretical introduction and to guide the reader throughout the rationale of this dissertation I have divided this Chapter into 3 parts. The first part (1.2) revises genre studies and pays special attention to the evolution of genres, the relationship between genres and the emergence of new genres drawn from previous ones as is the case for what I have labelled in this piece of the study as Med-E-Pops. The second part of this Chapter (1.3) reflects on the state of the art of scientific popularizations as journalistic reports and also on the evolution of these texts as web-posted accounts. Having recapped what this dissertation considers to be of paramount importance, the context of production of Med-E-Pops, this chapter closes with what I have considered as the third part of this Chapter 1 (section 1.4), which explores the concept of *voice* and my conceptualisation of the concept of *voice* in Med-E-Pops.

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10 Systemic Functional Grammar (SFG) has focused on the study of language as an interpretable system. However, I have not chosen SFG as an analysis perspective as it is explained in section 1.4 and in Chapter 2. For further reading see Malinowski 1923; Firth 1957; Bazell *et al.* 1967; Halliday 1978, 1985b, 1994, 2004; Hasan 1989; Martin 1992, 2010; Downing and Locke 1992; Matthiessen 1993; Halliday and Martin 1993; Martin and Veel 1998; Coffin 2006; Poynton 1985, Moore 2010; to name a few.

## 1.2 GENRE STUDIES

Central to this contribution to the study of voice in Med-E-Pops is the concept of *genre* in applied linguistics. Inspired by Halliday's studies, Martin (1984: 25) defines genre as: "[...] a staged, goal oriented, purposeful activity in which speakers engage as members of our culture. [...] context both of situation and of culture are important if we are to fully interpret the meaning of a text". Genre analysis approaches this concept by deducing that what mainly identify a group of texts are their situational and social contexts. This concept has been widely studied for more than three decades and is still conceived as a "complicated notion" (Bhatia 1993: 130). Therefore, this section reviews various issues related to genre studies in order to cast light on the definition of the Med-E-Pops genre, the contextualisation of the formal linguistic analysis and their later interpretation as realisations of the voice of Med-E-Pops writers.

Different approaches to genre studies are introduced below to assess which approach or school may accurately frame the characteristics of the genre under study in this dissertation. Within the three traditional approaches considered—New Rhetoric School, Sydney Genre School and the English for Specific Purposes (ESP) tradition—I will explain the reasons that led this study to ascribe to the ESP tradition. In addition, a summary of genre relations is also introduced to reflect on the existing relationships between the different texts collected or classified under the category of a genre. This reflection helps this study to narrow the scope of the current literature review towards key concepts that play a part in the contextualisation of the Med-RAs genre—the genre that originates Med-E-Pops. These key concepts are the conceptualisation of EAP, the discourse of science and discourse communities. Having described these previous issues that have a direct influence on the construction and contextualisation of Med-RAs, a reflection on how medical genres and genre theory evolve is included in this section to guide the reader from the canonical interpretation of Med-RAs genre to the electronic versions studied in this piece of research.

### 1.2.1 Approaches to genre studies

The North American School or New Rhetoric (NR) approach to the concept of *genre* is based on the idea that context is of paramount importance. This school is not centred on textual features or forms of discourse but on forms of action. Genres studied under this perspective are conceived as manipulated tools for

particular rhetorical reasons, social purposes or social actions (c.f. Bakhtin 1986, 2000; Berkenkotter and Huckin 1995), which is relevant to the study of voice in Med-E-Pops because this genre caters for a specific social need. The NR school tends to focus on the values and attitudes of the community members who use a genre, placing special emphasis on the context and on ethnographic studies. Therefore, in order to understand the way in which these social actions emerge, emphasis should be placed, according to the NR school, on the context or situation in which these actions occur. NR researchers prefer observation methods rather than linguistic analysis to analyse genres. As mentioned above, they base this observation on ethnographic tools such as direct observation or interviews in order to get a sharper description of context.

Consequently, in an attempt to understand how and why Med-E-Pops emerge as social actions, this dissertation applied no ethnomethodological approach when defining the Med-E-Pops, but a survey-based approach to doctors as potential consumers of both genres—Med-RAs and their counterparts Med-E-Pops.<sup>11</sup> Other principles that this sociocognitive perception of genre applies are enumerated by Berkenkotter and Huckin (1993: 500): “i) Genres are dynamic and change over time as responses to recurring situations and the user’s needs. ii) Genre knowledge is a form of ‘situated cognition’, a product of the action. iii) Genre knowledge embraces form and content, knowledge of formal conventions as well as appropriate topics, and knowledge of readers’ expectations. iv) When using genres we constitute and simultaneously reproduce social structures. v) Genre conventions signal a discourse community’s norms, ideology and social ontology”. Most recent theoretical works on NR (Devitt 2004, Corona 2008) argue that the existence of pre-existing genres, as well as other factors such as situation and culture, also forces NR to expand the conceptualisation of context as the main criterion for defining genre.<sup>12</sup>

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11 Studies on the NR school can be found in Bazerman (1981, 1988, 1994), Bakhtin (1986, 2000) Berkenkotter and Huckin (1993, 1995) or Devitt (2004) among others.

12 Devitt’s contribution is outlined below to simplify the common areas between this approach to genre and the approach selected to frame Med-E-Pops genre:

1) Genre as classification system. According to this idea, genres are classified according to the interests or purposes of the person or people who use these genres. 2) Genre as a form. To classify a genre we have to distinguish “what makes users recognize these as genres” (2004: 11). 3) Genre as response to a recurring situation. Genres do not emerge in isolation. If the situation in which texts emerge is understood, we then would be able to understand that readers have a certain set of presuppositions, expectations and

Researchers within the systemic functional school (Martin 1992; Paltridge 1993; Eggins 1994; Christie 1996; Martin and Christie 1997, among others) developed another approach from Halliday's hypotheses to the concept of *genre*, based on SFG. This approach is known as the Sydney Genre School and its main feature regarding this issue is an ideational view of the concept of *genre*. For Halliday, *genre* is used as a synonym of register as mentioned in the introduction to this Chapter. In addition, another theoretical tendency could be distinguished within this school. This tendency mainly focused on the social purposes of any *genre*. That is, both the content and textual conventions of Med-E-Pops should be formulated in order to have specific social purposes within its target community—this is discussed in depth in Chapter 3. Martin (1985: 251) stated that: “Genre does more than legitimise combinations of field, mode and tenor in a culture. It also represents at an abstract level the verbal strategies used to accomplish social purposes of many kinds”. This researcher together with Eggins and Martin (1997) considers that both register and *genre* are two different concepts that stratify this concept into meaning (register) and function (*genre*). Therefore the term *genre* (Martin and Rose 2003: 209) is considered as a term for grouping texts together. There are macrogenres that group texts together and these texts may be embedded within other genres or may be sequentially before or after another *genre*. As regards *genre* relations, this former idea would support the view of this dissertation when claiming that Med-E-Pops *genre* mirror their Med-E-RAs counterparts’ *genre*.

Two researchers within this school go beyond the systemic view of *genre* in order to express their interest in a socio-critical approach to the issue of *genre* in the field of CDA. Kress (1993: 33) focuses for instance on “the structural features of the specific social occasion in which the text has been produced and have seen these as giving rise to particular configurations of linguistic factors in the text which are realisations of, or reflect, these social relationships and structures”. He places a lot of emphasis on analysing the difference in power the participants of a text may have and these differences may be realised linguistically in that text. Van Leeuwen (1993, 2005a, b, 2008) focuses his interest, and therefore the attention of his readers on: who writes the text, for whom, where and when. Van Leeuwen advises studying

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assumptions related to that *genre*. 4) Genres can also be strategies used to respond to situations. 5) *Genre* can be perceived as a nexus that bridges cultural context, situational context or generic context. That is that to say, every *genre* is full of different pieces of its own baggage; ideology, people we have known, languages we speak, purposes, etc.

genre by taking into account discourse, content and style. In this last category, style, he thinks people are able to convey their identities and values. The interesting point from these two researchers for the purpose of this dissertation is the recognition of external expectations. In other words, apart from looking for actions in texts, we should also wonder about the external background of these texts. Who writes the text, what is his or her role and intention in the publication or for whom the text is, are basic statements that may cast light on power relationships and therefore on the nature of the publication.

The Sydney school and the ESP genre perspective base their analysis on the text and both of them are pedagogically motivated. Needless to say, the ESP perspective also problematises other aspects outlined by these two schools mentioned above (New Rhetoric and Sydney school). However, due to the characteristics of this corpus and these study research questions, this approach to Med-E-Pop genre is ascribed to the ESP perspective because it gives qualitative and quantitative evidence to define the genre contextualisation for the later analysis of the voice of Med-E-Pops writers. It could be said that the most representative leading figures in the ESP perspective are John Swales and Vijay Bhatia. Bhatia (1993) bases his definition and approach to genre on Swales' work. These paragraphs are therefore based on their views of genre. For instance, in Swales' (1990: 58) seminal work, genre is defined as:

A class of communicative events, the members of which share some set of communicative purposes. These purposes are recognized by expert members of the same discourse community, and thereby constitute the rationale for the genre. This rationale shapes the schematic structure of the discourse and influences and constrains choice of content and style.

This definition highlights communicative purpose as the key defining aspect of a given genre. However, the idea of signalling a specific purpose or set of purposes of a text has been problematised because it is not always easy to specify what these purposes are. In later works such as Askehave and Swales (2001) and Swales (2004), the reconceptualisation of the communicative purpose is still a key aspect of genre-based approaches. Nonetheless, they no longer consider it valid to readily classify discourses into generic categories. They stress the need of *repurposing* the genres, after an analysis of the discourse community, its values, goals, repertoires, etc. Swales (2004), draws on a number of genre theorists and lists a number of metaphors which can help identify and understand the concept of *genre* in ESP. He discusses genres as: (1) frames of social action, within which acts are performed; (2) language standards, just as there is variability in language

and a number of linguistic rules which govern its variation, there is variability in genres, which work under certain conventions and constraints; (3) biological species, which evolve, spread and decline; (4) families and prototypes, in the same way as family members are not physically identical but share a genealogical history, genres can be more or less prototypical, all sharing certain common roots; (5) institutions, as there is more to genres as well as to institutions than their material manifestations; and (6) speech acts, being performed.

Moreover, Swales (2004) problematises the analysis of an isolated genre and states that genres tend to occur as *constellations*. These constellations of genres can be of several types: hierarchies, driven by the different values attached to genres within a specific field; chains,<sup>13</sup> which are chronologically ordered, sets, comprising the particular genres an individual engages in, and networks, comprising all the possible genres available for a group—the following section (1.2.2) will explain these genre relations in greater detail.

In his also seminal 1993 book, Bhatia defines genres as:

[a] recognizable communicative event characterized by a set of communicative purpose(s) identified and mutually understood by the members of the professional or academic community in which it regularly occurs. Most often it is highly structured and conventionalized with constraints on allowable contributions in terms of their intent, positioning, form and functional value. These constraints, however, are often exploited by the expert members of the discourse community to achieve private intentions within the framework of socially recognized purpose(s). (1993: 13)

Bhatia departs from Swales' (1990) definition of genre by introducing a psychological aspect to it, as stressed by the last part of his definition. According to Bhatia, Swales pays no attention to how members with certain seniority, mastery or in Johns' (1997) words—quoted in Mur-Dueñas 2007a—with sufficient genre knowledge<sup>14</sup> about a specific genre can maximise genres for their own benefits,

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13 This term; “chain” is also used by Fairclough (2003) to describe how genres are embedded in other genres based on relationships of power.

14 Genre knowledge, according to Johns (1997), implies a shared name for it between writer and reader, shared communicative purposes, shared knowledge of roles, shared knowledge of context, shared knowledge of formal text features (conventions), shared knowledge of text content, shared register, shared cultural values and shared awareness of intertextuality.

thereby creating generic hybridity.<sup>15</sup> First in his 2004 book, Bhatia tries to depict the complexity of genres in the external world, focusing on their instability and their hybridity. This scholar would expand the concept of *generic hybridity* in many of his later works (see for instance; Bhatia 2008, 2011 or Berkenkotter *et al.* 2012). He argues that the genre pedagogical-orientated view of ESP has led to the establishment of models and to the simplification of a much more complex understanding and working of genres in the world—as in the Med-E-Pops genre. Greater emphasis is placed not only on the internal features and relationships of texts but also on what surrounds the text in order to make appropriate interpretations. With Bhatia's contribution to genre studies and the New Rhetoric view of social close observation, this dissertation also studies expert professionals or informants who use the genre in their everyday life in their professional settings, in an attempt to carry out appropriate data interpretation. Considering informants' or experts' feedback, who should control the discursive practices in the particular community in which the genre is used and recognised, is another contribution from this perspective that has enlightened the methodology of this dissertation. Under Bhatia's (2004) approach one of the things that could be questioned about Med-E-Pop genre is what he conceptualises as *generic integrity*, which he sees as “a socially constructed typical constellation of form-function co-relationships representing a specific professional, academic or institutional communicative construct realising a specific communicative purpose of the genre in question” (2004: 123).<sup>16</sup> To my knowledge, the Med-E-Pops genre is still not conventionalised or standardised, as is the case with their counterparts from the Med-RAs genre. However, one of the contributions, which this piece of research intends to make, is a formal approach to the genre of medical RAs with electronic popularised versions based on Bhatia's conception of *colonies*. Since some genres have evolved and begun to be exploited by expert members, they have come to

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15 This generic hybridity is not explored in this study since Med-E-Pops are written by medical personnel or specialised journalists. Med-E-Pops are not written by the same researchers who wrote the corresponding Med-E-RAs. Therefore, researchers can hardly maximise the Med-E-Pop genre for their own benefit by participating in the creation of generic hybridity.

16 In relation to RAs, generic integrity is ensured by the peer review process and by editorial intervention. In Chapter 2 this issue will be taken up in an attempt to cline the journals used to study the Med-E-Pops. At least two of the journals state in their on line guidelines that the Med-E-Pops have to undergo a peer review process and editorial intervention.



be aligned with other genres, forming a colony with their paramount importance based on communicative purpose (see section 1.2.2 below).<sup>17</sup>

It should be mentioned that from its outset in the 1980s genre studies has contributed to the analysis of texts in their context of production. Bhatia (2002, 2004, 2011) development of genre studies has entailed a progression from the study of isolated lexico-grammatical features in a text at a semantic or syntactic level to the study of the organisation and internal structure of the text and to the exploration of those features as related to the particular social context. Furthermore, as mentioned above, Swales (2004) questions the analysis of genres in isolation. While he states that genres occur in constellations, Bhatia (2004) suggests that genres evolve and come to be aligned with other genres, thereby forming a colony. Therefore, in an attempt to define Med-E-Pops genre I introduce section 1.2.2 to observe and later analyse the relationship, influence and evolution of Med-RAs over the Med-E-Pops genre.

## 1.2.2 Genre relations

Many researchers have attempted to describe genres in relation to other genres available in a group instead of describing genres in isolation. Scholars have observed and determined different genre relations depending on the specific texts studied: Devitt (1991), sets of genres; Bazerman (1994), system of genres; Orlikowski and Yeats (1994), genre repertoires; Tardy (2003), genre networks; Swales (2004), chains of genres or Bhatia (2004), colonies. They emerge as a response to a previous genre, as a constituent of a wider repertoire, as a member of a system of interactive genres or even as an evolution and adaptation of former genres due to public demands. To observe, describe and define Med-E-Pops genre—in which the voice of Med-E-Pops writers is being analysed in this dissertation—in this section I review recent evidence regarding various genre relations studied in applied linguistics in order to explore the genre relations between Med-RAs and Med-E-Pops. A reflection on this genre relation will

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17 Some of the colonies Bhatia describes are promotional genres—including job applications, sales promotions, job advertisements, book reviews, book blurbs, fundraising and other letters (2004: 62), academic introductions—including essay, book and article introductions (2004: 67)—and, what will shed light on this piece of research's later analysis, reporting genres—including news, technical, business, accident, police, preliminary information, medical and scientist's reports (2004: 81).

allow an optimal analysis and later description of both the process of evolution of Med-RAs into Med-E-Pops and of the Med-E-Pops genre itself. Therefore, in agreement with Swales (2004) I think that genres do not occur in isolation but in relation to others, and therefore Med-E-Pops can only be defined and described on the basis of a *process of evolution*.

Devitt (1991) tries to unveil the complex set of relationships existing between texts by studying a single professional field; tax accounting. From a social constructivist perspective she describes the many different text types in the tax accounting community and interprets these texts in terms of their social and epistemological functions for their community. As she explains in her study, the tax accounting community is interlaced with texts. These texts form a complex network of interaction as Devitt (1991: 336-7) puts it:

[a] structured set of relationships among texts, so that any text is best understood within the context of other texts. No text is single, as texts refer to one another, draw from one another, create the purpose for one another. These texts and their interaction are so integral to the community's work that they essentially constitute and govern the tax accounting community, defining and reflecting that community's epistemology and values.

This piece of research is able to encapsulate the interaction of texts within a single discourse community, a single field of knowledge and to establish referential, generic and functional relationships among texts. Devitt (1991) also determines that in addition to text overlapping there is a constant internal reference to field texts because they respond to tax accounting rhetorical situations. In other words, the rhetorical situations to which the accountants' texts must respond tend to be repeated because of the defining context of the professional community. Clients have recurring rhetorical needs for which they request that accountant's rhetorical products. Each text then draws on previous texts written in response to similar situations. When accountants write these texts they are making connections to previous texts within the community. This reinforces Bazerman's (1988) point regarding the fact that a genre should be understood as a social action that needs to be defined and recognised by its users.<sup>18</sup> The main tenet of sets of genres

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18 Devitt (1994) states that the accountant's primary activity is to interpret the tax regulations for a client, involving subactivities ranging from completing tax forms to defending the client's position to the taxing authorities. Therefore, the different letters and documents tax accountants produce and reproduce (together with oral genres related to tax accounting) form the accountant's genre system; a set of genres interacting to accomplish

relationships is that these text relationships take place on the same professional field as might the case with Med-E-RAs and Med-E-Pops. Both texts occur under the umbrella field of medical knowledge and both genres are recognised by their discourse communities. However, Med-E-RAs and Med-E-Pops should not be conceived as constituents of the same set of genres. Both specific groups of texts do not belong to a single professional field or community. On the contrary, both genres have different rhetorical conventions, different purposes and different discourse communities.

Other studies have considered that a genre established within a particular community serves as an institutionalised template for social action that shapes the ongoing communicative actions of community members through their use of it. Members of these communities do not depend on a single genre for communication. These sets of genres that are habitually enacted by members of the community are referred to by these scholars as “genre repertoire”.<sup>19</sup> According to Miller (1984), it is the communicative purpose that is constructed, reorganised and reinforced within a community. These genres could then be overlapping or interdependent with the others.<sup>20</sup> Due to the dynamism of the dissemination channel of Med-E-Pops—the Internet—I borrow here one of this approach research questions: “Given ongoing variations to existing genres, when can it be said that a new genre has emerged?” Orlikowski and Yates (1994: 545) suggest that:

In practice, it is impossible to define an exact point. The above definition of genres as socially recognized types of communicative action suggests

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the work of the tax department. The genre set not only reflects the profession’s situations but it also helps to define and stabilise those situations. According to this researcher (1991: 341): “The existence and stabilizing function of this intertextuality both within and across genres are demonstrated by the similarity of the genres sets and all instances of a genre across all of the accounting firms”. This creates among the users or community members generic expectations.

- 19 Orlikowski and Yates (1994: 542) exemplify this concept with a visual metaphor: “Just as identifying a symphony orchestra’s repertoire of symphonic works sheds light on the orchestra’s established musical practices, identifying a community’s repertoire of genres provides information about its established communicative practices and, hence, how it organizes some of its activities”.
- 20 Bazerman (1995) describes the former situation as a web of interrelated genres where each participant acts and challenges or demands a generic response. These sequences—as opening and closing statements in a court trial—constitutes a genre system.

that variants are communicative actions still recognizable as instances of the old genre, while a new genre can be said to have emerged when a new conjunction of form and purpose becomes recognized by its community as different from the old. Such recognition may be explicitly articulated within the community or be implicit in members' practices.

Therefore, Med-E-Pops could be seen as a new conjunction of form and purpose from Med-RAs. Besides, if a community's genre repertoire indicates its established communicative practices, it is also expected that the set of genres from a specific repertoire share ideologies and communicative behaviours. Berkenkotter and Huckin (1993: 476) state; "genres of academic writing serve to enact and reflect the epistemological, ontological and ideological assumptions of particular disciplines". According to Orlikowski and Yates (1994),<sup>21</sup> community genre repertoire is initially established when a member of a new community simply starts enacting genres he or she used as member of another community. These genre repertoires will therefore be affected by members' prior experiences in similar situations and expectations based on knowledge of genre rules. One of the main characteristics of genre repertoire is that members or users inadvertently or deliberately introduce changes in the genres that constitute it. Users decide to adopt new routines or alter old ones due to the necessities that have arisen in the genre practice over time. These changes and even the new introduced genres only become part of community's genre repertoire "[w]hen they are reorganized and used by the other members of the community, whether this is accomplished implicitly through practice or explicitly by external or hierarchical mandate" Orlikowski and Yates (1994: 549). Therefore whether a genre intentionally or unintentionally becomes dormant in a genre repertoire will depend on the social interaction of the community and its real usage within the community itself. In their empirical study, Orlikowski and

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21 This dissertation also felt the need to approach the concept of genre repertoires by reviewing Orlikowski and Yates' (1994) empirical study on communication exchange by a group of distributed knowledge workers in a multiyear, interorganisational project conducted primarily by e-mail. The review of this concept of genre repertoires could also cast light on the type of relationship Med-E-RAs and Med-E-Pops have. Orlikowski and Yates (1994) support the idea that genres, as organizing structures, shape and are shaped by individuals' communicative actions. Their findings reveal that the wide selection of communicative practices existing in a community are shaped and changed in response to community norms, project events, time pressure and media capabilities. Giddens (1984) and Bourdieu (1990), Orlikowski and Yates (1994) state that communication is an essential element in the organising process through which social structures are produced, reproduced and changed.

Yates (1994) realised that the natural development of affairs in the professional practice, the absence or presence of some genres depending on the communicative needs and based on a problem-solving professional setting comprised a genre repertoire. As Barley (1988: 49) puts it: “[o]nce institutionalized in this way, the genres constituting a community’s genre repertoire are organizing structures, serving as behavioural interpretive templates for the community’s organizing process [...] slippage between institutional templates and the actualities of daily life”. As is shown in the survey-based approach included in the Methods chapter of this dissertation, members of Med-RAs discourse community recognise that there are explicit and implicit differences between Med-RAs and Med-E-Pops and yet they read and recommend them to their patients for further reading. Therefore, Med-E-Pops could be said to be a new genre in the field of medicine, but one may wonder whether Med-E-Pops have been created as a negotiated dialogue between writers and potential readers or as a response to a social interaction or demand, or even as a constituent of a medical genre repertoire (this will be formally discussed in Chapter 3).

A different approach to genre relations is Tardy’s (2003) description of genre networks. In her study on grant writing, Tardy (2003) observes some genre relations, aiming to answer three questions: *What is the nature of the genre system of grant writing?*, *What are the roles and functions of that system?* and *What does exploration of the system reveal about genre knowledge and how writers develop such knowledge?* Her findings suggest that grant writing “[is] fundamentally a social activity, that the intertextual networks of the genre system serve to navigate writers through that system and to build the writers’ knowledge of the system, and that knowledge of a genre system may differ in important ways from knowledge of an isolated genre” (2003: 7). With Myers (1990) or Connor and Mauranen (1999), Tardy (2003) also agrees that the genre of grant funding does not exist in isolation. These scholars subscribe to the idea that these types of genres, such as grant proposals, are part of a system of interactive genres. Also, in order to explore this concept, users must understand that their success in the genre depends on their appropriate management of the social interactions and communicative goals embedded in the genre. According to Bazerman (1988), these genres serve as a way of creating order, as they reorganise and construct actions in recurring or typified situations. The users, as mentioned above, may be varied. In other words, the candidates or applicants to the previously mentioned example of grant funding could be academia members from a wide range of scientific disciplines. This fact would describe the potential discourse community of genre networks as fluid and unstable. Moreover, there are multiple discourse communities that

coexist and overlap within disciplines and consequent compulsory steps given to the bureaucratic institutions to which grant funding could be addressed. Researchers such as Berkenkotter and Huckin (1995) and Beaufort (1997) suggest that the diverse discourse community of grant proposals provides a construct for understanding genre networks as social actions within multiple social groupings.<sup>22</sup> Unlike Med-E-Pops, grant proposals as an example of network genre are progressively interacting with their discourse community and answering or meeting requirements that finally may lead writers to reach their target. Among other researchers such as Berkenkotter and Huckin (1995) or Miller (1994), Tardy (2003) agrees that writers gain knowledge of the genre network by having access to the practice community and colleagues' interaction. Therefore, writers learn how to address the discourse communities of the varied genre system by being exposed to them. Prior (1998) describes this fact as a "laminated activity". Laminates can be combined in different orders depending on the final goal. However, Tardy (2003) states that when texts index one another participants are provided with a kind of railway that guides them through the social and textual terrain of the genre system. Therefore, she states, "grant application constitutes a kind of core genre, in many ways reflecting and necessitating the larger network. The network, as it has evolved over time, guides participants through its various social and textual nodes" (2003: 10).

This section observes different approaches to genre relations and reinforces the fact that genres cannot be defined in isolation but in relation to others. Moreover, there are interrelated genres—such as the constituents of genre networks—that cannot exist in isolation. That is, these specific texts establish different kinds of

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22 As mentioned above, there are not only genres operating within multiple communities but they also coexist with other genres. This is the case with the system of genres described by Bazerman (1994: 97) as "interrelated genres that interact with each other in a specific setting" and genre sets described by Paré (2000: 156) as genres "[that] shape a unity of approach and conceptualization within the community practise; it shapes in large part the development of the individual's thinking with others about the client through the mediating structures of the genres set". Paré (2000) goes beyond the concept of genre sets, adding that writers acquire knowledge of the genre sets through collaboration with other members of the community. Tardy (2003) states that this former set of genres constitutes a genre system that serves to mediate overlapping communities of practice or discourses communities. Bazerman (1994) distinguishes between genre systems and genre sets stating that whereas a genre set represents only the work on one side of a multiple person interaction, the system of genres "would be the full set of genres that instantiate the participation of all the parties" (1994: 98-99).

interdependent relationships depending on their field, communicative purpose and discourse communities. The genre relations this section reviews allow me observe that the Med-E-Pops genre and the Med-RAs genre have a special relation. The genre relations between Med-RAs and Med-E-Pops could not be defined as a set of genres, a genre repertoire or a genre network. They could be conceived, as mentioned in the previous section, as members of a chain (Swales 2004) or even part of a colony (Bhatia 2004). Med-RAs and Med-E-Pops could be considered as members of a colony if Med-RAs were conceived as a powerful source that could trigger the production of Med-E-Pops. Furthermore, these two genres—Med-RAs and Med-E-Pops—could be perceived as constituents of the same professional setting since discourse community social interaction between both genres is not required to create the resulting Med-E-Pops genre. The discourse community of Med-E-Pops can be conceptualised as unstable due to the fact that anyone can access Med-E-Pops and understand their content. Still, there are grey areas in the definition of these genre relations and beyond; in the definition this piece of research aims to reach after analysing both corpora. To my knowledge, none of these genre relations considers the facts that genres can be shaped and constrained by both the medium and channel (the Internet) in which the genre is construed and by their final communicative genre aim; to disseminate medical knowledge outside academia with scientific rigour (see sections 1.2.5 and 1.3). Therefore, to observe how this process is articulated I will now present a top-down review; from the constituents that shape the former genre (Med-RAs) to the evolved or resulting genre (Med-E-Pops).

### **1.2.3 An introduction to EAP, the discourse of science and discourse communities**

EAP is an increasingly important area in applied linguistics. EAP has been described as “language research and instruction, which focuses on the specific communicative needs and practices of particular groups in academic contexts” (Hyland 2006: 2). Although EAP is not the central line of research of this dissertation, I now turn to EAP in this study in an attempt to show how Med-E-Pops are drawn from Med-RAs and how the concept of *voice* contributes to create faithful replicas of Med-RAs for lay people. EAP knits together, and therefore influences, the rhetorical conventions of specific texts like RAs, the discourse used in these texts and the addressees or targeted discourse community. In Hyland’s (2006) view, EAP has evolved rapidly over the last twenty years from a

branch of ESP in the 1980s. By the time the journal *English for Specific Purposes* began in 1980, EAP was established as one of the two main branches of ESP together with EOP, English for Occupational Purposes. EAP is a major force in English Language Teaching and research around the world. At first sight it seems to be a practical response to the needs of a particular group of students. However, EAP covers many areas of academic communicative practice: from classroom interaction to student writing and not forgetting research genres or administrative practices. Moreover, EAP has steadily reached the global market due to the growth of English as the leading language for the dissemination of academic knowledge. This situation has taken teaching and researching in higher education to a higher level of interest due to the huge growth in research into the genres and practices of different academic contexts. The result of this process has led to what Hyland (2000) calls the “Academic English Discipline”.

To unveil to what extent Med-E-Pops mirror Med-E-RAs, this section observes first the discourse of science and secondly the concept of *discourse community* in EAP. Having explored these Med-RAs features, I will be able to interpret with more scientific rigour how and why Med-E-Pops mirror Med-E-RAs. Nowadays no one would deny the importance of English as an international lingua franca for both knowledge claiming and dissemination. There is a growing interest in studying English as the international language of scientific dissemination (Swales 1997; Bosch 2000, 2002; Hewings 2002; Hyland 2002c; Tardy 2004; Ferguson 2007; Burgess and Cargill 2008 and Hyland 2009, to name a few). As is widely known, English has replaced Latin, Arabic and Greek as the globally recognised language of science. It should be pointed out that the widespread use of English as a lingua franca in the research field entails major burdens for non-native speakers of English when aiming to publish the results of their work in the international arena in most disciplines (c.f. Lillis and Curry 2010; Mauranen 2011). The role of English as the language for international academic and scientific exchange is currently well attested. For instance, Ferguson (2007), regarding the importance of English as vehicle of knowledge dissemination states that there are several factors which can encourage discrimination. Among others, socio-economic factors may have an influence on the learning of English and its usage. At the same time, nowadays English plays a part in most of the language planning and educational curricula all over the world. However, regarding foreign language learning, older generations were educated under the influence of French or German. This fact makes scholars invest “extra time and effort for the production of less than optimal written text” (Ferguson 2007: 33). However, this native/non-native distinction has been criticised because the degree of experience or expertise in academic



publications and proficiency in certain kinds of academic written discourse in English is what counts and helps when writing successfully—and therefore when being published and read. Therefore, the effective use of rhetorical conventions and the way they are realised in language (language choice and language use) deserve thorough exploration and they constitute the focus of study in EAP. Also, from the beginning of the 1980s there have been scholars such as Maher (1983) who have openly claimed that English is the international language of medicine.

Scholars such as Gutierrez-Rodilla (1998) argue that there are certain scientific messages that lack accuracy, neutrality and systematisation. Other scholars such as Barona (1990) argue that scientific language cannot be objective because the relationship between science and objectivity is established throughout language and language is not always objective. This scholar adds that each historic era has influenced the way in which language portrayed science from the Hellenic harmony with nature or Christian Middle Ages to the modern view of reality of Enlightenment and the Vienna circle's scientific world-conception. Contrary to these assumptions, other scholars (Savory 1967) agree that the language of science is always objective because authors have no affective implications with the scientific discourse they use in their academic papers. They add that the speciality of their discourse delimits the potential readership to specialised readers; members of the same discourse community. This fact increases its social isolation from society, the impersonality of their works and therefore the objectivity of their discourse.

This piece of research is mainly focused on how scientific dissemination discourse is drawn from specialised scientific medical discourse and more specifically on how those lexico-grammatical features can be interpreted as realisations of the writer's voice. Therefore, it is important to remember with Nwogu (1997) that the source texts under study that are Med-E-RAs have an IMRAD format. Every member of the medical discourse community masters how to manage the medical research information in the text and the linguistic implications embedded in each move of the Med-RA. Although medical discourse has been described as poor, syntactically untidy or even excessively pompous (Adams-Smith 1987) members of the medical discourse community usually have an excellent command of these discipline-specific generic conventions. This is easily observed in numerous linguistic studies on medical discourse dealing with: the general structure of Med-RAs (Gosden 1992, 1993; Skelton 1994; Nwogu 1997), syntactic aspects of Med-RAs (Adam-Smith 1984; Salager-Meyers 1986; Malcom 1987), pragmatic and rhetorical conventions of Med-RAs (Myers 1989a; Luzón-Marco 1998; Oliver 2004)

or even meta-discursive aspects of Med-RAs (Lafuente-Millán 2010; Herrando-Rodrigo 2010). However, it could be stated that every member of the medical community is even more aware of the conventions of the Med-RAs genre and the embedded discourse characteristics since the Vancouver group first met in 1978 and arranged to create the International Committee of Medical Journal Editors (ICMJE). Almost every international medical publication asks their contributors to fulfil the Vancouver criteria, citing and quoting requirements published in 1997. Later in 2007 a *References of Style and Format* was also published by the ICMJE in an attempt to cast light on the creation of full academic medical manuscripts.

Halliday's (2004b) *The Language of Science* offers a general summary of how the language of science packages knowledge and more specifically how grammatical constructions of scientific knowledge are framed in English. However, one of the most influential works on the language of science is the seminal work of Halliday and Martin (1993) *Writing Science*. One of the main concerns of studying the language of science is to observe how subjectivity and objectivity are projected in scientific RAs. This dissertation will return to this idea in 1.4.2.d when reviewing how some lexico-grammatical features could represent the voice of the Med-E-Pops writer and may be interpreted as a contribution to the objectivity of the text. However, in recent years, the assumption that scientific knowledge is objective and devoid of personal traits has been challenged (*c.f.* Mur-Dueñas 2007a; Lorés-Sanz and Murillo-Ornat 2007; Lafuente-Millán 2008). It is now widely acknowledged that interpersonal and affective meanings play an equally important role as ideational or referential meaning in reporting academic knowledge. In Mur-Dueñas' (2007a: 13) words, "it is most crucial for scholars to portray a professional authorial persona by indicating their stance and negotiations academic knowledge with their readers in conventionalised, persuasive ways." Nonetheless, we must consider that since the discovery of DNA (see Watson and Crick 1953) there has been an internal rationale in the field of science that forces scientists to be objective when writing their findings for their later dissemination. Like Ciapuscio (1992), many linguists agree that a characteristic feature of scientific discourse is the constant reference to the object and the phenomenon studied whereas the agent has traditionally been downgraded to secondary position to increase objectivity. This feature also stresses the lack of emotional elements. That is, the language of science is deprived of emotiveness in order to focus on the cognitive aspects of the research, which is being narrated. Ciapuscio (1992) explains that in scientific texts the absence of emotional elements is inversely related to the presence of agentless constructions. Salager-Meyer (1994: 151) points out that "science has always

oscillated between the desire to be precise and the impossibility of quantifying (accurately) the world. (This is why scientists' eagerness for accuracy is very often frustrated)". Above all, there are two basic tenets shared by academia regarding the language of science: i) The potential vagueness of RAs seek the acceptance of the disciplinary members and at the same time reduce their colleagues' potential rejection, as scholars such as Lakoff (1972), Myers (1989a) or Swales (1990) have pointed out. ii) Meanwhile, researchers need to be precise and objective and to do so they use different linguistic strategies to present their findings and their research as an accurate and precise *object* (see for instance Rounds 1981; Tarantino 1991 or Salager-Meyer 1994).

Since this dissertation deals with different types of scientific and/or medical discourse, this section turns to French Loffler-Laurian (1983) in order consider whether the type of discourse, in this case medical discourse, could really vary depending on the potential readers or recipients for instance:

<i>Type of discourse</i>	<i>Issuer</i>	<i>Message (source)</i>	<i>Recipient</i>
Specialised scientific discourse	Scientific researcher	Journal (RA)	Researchers
Pseudo-scientific dissemination discourse	Scientific researcher or reviewer (e.g. specialised journalist)	Pseudo-scientific publications	Non-disciplinary research members
Scientific dissemination discourse	Specialised journalist	Pseudo-scientific publications	Lay audience
Pedagogic scientific discourse	Teacher	Broad topics	Secondary students, undergraduates, etc.
Scientific academic discourse (e.g. PhD)	Student	Specific documents	Specialised board
Official scientific discourse	Research team or even civil servant	Reports	Official institutions

Table 1. *Classification of types of scientific discourse taken from Loffer-Laurian (1983: 11).*

According to this classification, specialised scientific discourses should change when adapted to scientific dissemination discourse, due to the fact that discourse should not share the same issuer, message and recipient (I would also add the channel of dissemination). Moreover, their communicative purpose should be apparently different. As mentioned above, discourse is used in EAP and in many

different disciplines to delimit the potential readership to specialised readers who are members of the same discourse community. Therefore, I considered it very important to explore the concept of *discourse communities* in order to understand better the context of production of both Med-E-RAs and their counterparts as this dissertation's object of study, Med-E-Pops.

Having introduced a theoretical review on genre, EAP and the discourse of science, it is essential for this study to introduce some ideas on the potential addressees and the embedded constraints that are implicit on the two-way relationship between genre and the discourse community. The concept of *discourse community* has been described as a key concept in order to explain the way genres are created and used within particular social groups and constrained by their goals and conventions. This concept highlights the fact that we tend to use language to communicate with other individuals and other members of our social groups—or members who are interested in the same topic or issue being discussed—rather than with the world at large (Hyland 2005a).

Swales (1990) highlights six characteristics which define a discourse community, in other words, he suggests six features for identifying a group of individuals as a discourse community:

- It has broadly agreed set of common public goals.
- It has mechanisms of intercommunication between its members.
- It uses its participatory mechanisms primarily to provide information and feedback.
- It utilises and hence possesses one or more genres in the communicative furtherance of its aims.
- It possesses genres and has acquired some specific lexis.
- It has a threshold level of members with a suitable degree of relevant content and discursual expertise.

A discourse community is an essential component in the EAP framework because it helps to place academic practices within a given context. According to Mur-Dueñas (2007a: 23) this tight and constrained conceptualisation of discourse communities “[i]t has been criticized as being deterministic and structuralist, not leaving space for individual choices within them”. Hyland (2005a) states that a particular discursive practice enables the understanding of genres as social actions rather than just as language. However, criticism has helped to redefine this concept and for it to be regarded as dynamic and flexible. It is seen as a rhetorical construct delimited by the members' practices and conventions rather than by their goals.

In Hyland's view (2005a), for instance, the concept of *community* is central to the appreciation of metadiscourse as it draws attention to the fact that communication is always situated within social contexts. *Community* helps to specify *culture* and it also complements *genre*. Genre and community determines each other's domain: each helping to form and being formed by the other. Hyland (2005a: 138) states that "[t]ogether (genre and community) they provide a descriptive and explanatory framework of how meanings are socially constructed, considering the forces outside the individual which help guide purposes, establish relationships and ultimately shape writing".

The idea that both the concepts of genre and discourse community are nowadays regarded as dynamic and therefore compelling and flexible as well as malleable, casts light on the conceptualisation of the Med-E-Pops discourse community. This reflection will allow this study to interpret the rationale of both Med-E-Pops as a social response and the concept of a Med-E-Pops *discourse community*. For instance, Hyland (2005a: 140) claims that members of a discourse community can participate in different discourse communities and of course, the level of involvement or participation of each member can be different. This multiplicity of membership can bring about different individual views or values when participating in each of them, as may be the case with professional doctors producing and reading Med-E-Pops for different purposes and reasons.

Furthermore, recent studies have reflected on the issue of having academics working on similar research topics, sharing understandings, values and goals. Attention should be paid to two concepts that reflect this issue. First, Becher and Trowler's (2001) concept of *tribes* and secondly, Curry and Lillis' (2004) concept of "community of practice". For the first one, *tribes*, it can be said that researchers are thought to belong to different tribes or groups delimited by their methodologies, their ways of enquiry and shared epistemologies. These tribes or groups are known to share rites, ceremonies and practices that may vary from one tribe to another. Regarding the second concept, *community of practice* also refers to the social and discursive practices of a group of members who, of course, share common values and understandings. Mur-Dueñas (2007a) suggests that in EAP these two previously mentioned concepts are generally approached by the mutually absorbing concepts of disciplinary community (Hyland 2000a) and disciplinary culture (Bhatia 2004). For these authors, texts should be studied and approached from a social perspective due to the fact that texts are the outcome of the interaction between the members of those communities or cultures. With Bhatia (2004) this piece of research reinforces

the fact that disciplinary culture is a key external factor of generic integrity. That is, genres are modulated by consensual conventions and at the same time these conventions and constraints affect the principles of the disciplinary cultures. Hyland (2000a) believes that disciplinary communities are characterised by certain knowledge, beliefs and values, which are shared by their members' writing practices.

In general, it could be concluded that the Med-RA discourse community prevents outsiders from understanding medical texts and therefore their content. Since the lay readership that surfs the net in search of medical information does not understand these texts, which are not designed for them, the need for understandable information arises. Therefore, Med-E-Pops are created to meet these new and evolving social expectations; as a response to an international lay audience that searches the net and updating medical texts for members of the Med-RAs discourse community (see Chapter 2) who may lack the time to read all the medical literature published daily around the world.

#### **1.2.4. Evolving genres and evolving theories: approaching Med-E-Pops**

This section narrows the theoretical scope of this dissertation from traditional approaches to genre studies to a brief and specific reference to the widely studied medical genres from which Med-E-Pops are drawn. Here I introduce the three main recognised medical academic genres traditionally studied in applied linguistics: case reports, research articles and editorials. A further review of Med-RAs structure is included in Chapter 2 in order to describe and justify the corpora of Med-E-RAs and Med-E-Pops used in this dissertation. I also explore several genre researchers' concerns about the dynamic conceptualisation of genres. It is my intention here to show how traditional medical genres, among many other genres, are exposed to and also emerge from a constant evolution (Campagna *et al.* 2012). The evolution of medical genres is referred here to justify the result of a versatile and even hybridisation process in which Med-RAs and medical knowledge dissemination journalistic articles mix. This generic evolution, mixing or adaptation is hosted in a medium; the Internet. This electronic or digital component of the Med-E-Pops, studied in this dissertation to contextualise the main research question of this study which is the voice of Med-E-Pops writers, is further developed in section 1.2.4.

Medical research papers can be classified into three categories: clinical case notes—known as case studies, research papers or research articles and editorials. The clinical cases are short reports; they are briefer and simpler than research articles. These case studies begin with a short introduction of around five to eight lines which actually functions as an abstract. This introduction is followed by the case proper report. In Calnan and Barabas' view (1973: 8), the art of this kind of medical writing is “to type out the history, the clinical findings, the specialist investigations and the results of treatment, in exactly the same order as they were recorded in the patient's notes, to add a few illustrations to the script and then submit it to an appropriate journal”. The third and final section of the case study is the comment or discussion. Calnan and Barabas (1973: 8) warn: “[it] may require a little more effort, for the author who has to ask himself why the patient had symptoms, why things happened the way they did, and why the therapeutic results turned out the way it did”. In Adam's (1984: 29) view, this switch from detachment to involvement is reflected in the frequency of author's comments in this section. Research papers fall into two main types: those based on clinical trials where—for example, two separated groups of patients are given different treatment for an ailment and the results are compared—and those based on epidemiological studies—where groups are reviewed with the help of medical records and interviews, but no actual clinical trial takes place.<sup>23</sup> The conventional structure of RAs is based on the *Introduction, Methods, Results* and *Conclusion* move structure (Swales 1981). In medical research papers, the section *Methods* is labelled “Methods and Patients” because the sample or corpus of RAs is always based on patients. They also include two moves at the end, *Discussion* and *Conclusion*, which most of the time are combined under a single joint heading. The *Discussion* is the longest section of the paper. It consists of an explanation of the methods and an interpretation of the results, some disputation, showing how work fits into the general body of knowledge of the subject and arguing the claims of others and finally a disquisition, considering the implications for current practices and for other disciplines, possibly with an expression of the authors' opinions, philosophy or theory. According to Adam's study (1984: 25), the *Introduction* and the *Discussion* are strongly attitudinally marked.

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23 In this Med-E-RAs corpus collection this Med-RAs distinction was under-considered since the object of study was the Med-E-Pops genre. Therefore whether the Med-E-RAs were experimental or epidemiological was disregarded.

The editorials are characterised by a lack of subheadings, a fact that makes their structure more difficult to follow. They are the freest in form and the most heavily attitudinally marked. Syntactically and linguistically speaking, they are the most complex of the three categories. However, they are very useful because they frequently discuss a single disease or a method of treatment. As a whole, case studies have virtually no author's comment except in the final section whereas the authored/marked sections in the RAs are the Introduction and the Discussion. Editorials are full of attitudinal marking throughout and are not divided into subsections. Although it is outside of the scope of this section to study RAs in depth, Chapter 3 revisits these texts' structural tenets to establish a generic contrastive analysis for the later data interpretation.

These three main medical genres are in constant evolution—unlike a canonical perception of academic genres. New rhetorical and lexicogrammatical features are gradually being introduced into these traditional academic genres (see for instance: Bazerman 1988; Berkenkotter and Huckin 1995 or Herrando-Rodrigo *et al.* 2012). Berkenkotter and Huckin (1993: 500) adopted the paradigm of *dynamic evolving genres* as the main principle when describing their concept of genre. In their studies on genre, linguists do not overlook to consider the fact that almost every written genre is evolving due to societal needs. Kamberelis (1995: 150) states that “neither old nor new community members ever learn genres once and for all; rather, they must continually learn the generic ways of making meaning with texts that evolve within the ongoing socio-rhetorical activity of the communities”. Changes in our social contexts are motivating even changes in the conceptualising of the term *genre*. One of the best examples is the increasing use of online newspapers and therefore studies about electronic genres (see for instance Dickey 2004; Wise 2005; Myers 2010; Luzón-Marco 2010; Campagna *et al.* 2012 or Herrando-Rodrigo 2012). Hallin (1997) studied how this rapid rise of the number of Internet users has also shaped this genre. News articles are short texts that are sometimes reduced to a headline in electronic publications. Thurman (2007) justifies this layout by stating that online newspapers engage readers for very short periods of time. Therefore, many studies (Bateman 2008, Bateman *et al.* 2006; Knox 2007, 2010) have been conducted on how social processes, in this case related to mass media, have affected the evolution of certain genres. There are of course certain genres that are witnessing slight but slow changes. It is well known that genres such as the scientific RA genre has a priority as such, which is disseminating knowledge claims and is therefore intended to be accepted by



the target audience of peers, that is the RA discourse community. Berkenkotter and Huckin (1995: 40) in line with earlier studies such as Bazerman's (1988) stated:

Genre features of the RA are therefore evolving in the direction of a more reader-based schema. However, this has been taking place gradually, as there is a notable opposing pressure to retain the traditional writer-based schema. The reason is that the primary role of the scientific RA, even more than conveying new knowledge claims, is the certification or validation of those claims.

From Eggins (1994: 36) early conceptualisations of genre; “[...] genre is a purposeful cultural event that is realised through schematic structure and realisational patterns”—and subsequent works that stress the simultaneous clashing of discourse analysis, genre analysis and discourse communities roles when approaching genre analysis (Dudley-Evans and St. Johns 1998)—have become more flexible. This interest in genre analysis, as mentioned in the previous section 1.2.3, stems from the global interest in teaching and learning English for specific purposes. Swales' (1990) seminal work opened a Pandora's box full of possibilities, realities and academic situations. A lot of research has been carried out during these years. However, the focus is now on the potentiality of this genre flexibility concept, which will later be related to the influence of emerging electronic genres.

Bhatia (2002: 2) reflects on the issue of genre, wondering if genre analysis has always analysed the issue or has “domesticated” it in a fictional way to make it fit into teaching syllabuses for classroom environments:

Genre analysis can be viewed from two different perspectives: it may be seen as a reflection of the complex realities of the world of institutionalised communication, or it may be seen as a pedagogically effective and convenient tool for the design of language teaching programmes, often situated within simulated contexts of classroom activities.

Bhatia, like many other researchers, has highlighted that nowadays the issue of genre is not just crucial for linguists but it has also gained interest among members of other disciplines such as scientists, due to their increasing need to publish their research. This scholar also points out (1998, 1999) that genres should not vary across disciplines. However, there are certainly variations and conflicts between some academic genres among disciplines. Different perspectives, nomenclatures or even interpretations—sometimes contradictory—can be found

among members of the same discipline as Bhatia (1998) states in agreement with researchers such as Candlin and Hyland (1998).

Approaches to genre analysis should therefore be based on dynamic perspectives of real life situations, because nowadays texts are also varied in their communicative purposes and with a much more varied purpose. I agree with Berkenkotter and Huckin (1995) that although we mainly distinguish genres due to certain characteristics, these genres are in constant evolution. Moreover, these authors also alert us to the fact that although there are certain genre patterns among disciplines, some experts have launched different patterns based on these original patterns in order to disseminate their work in other types of publications. Bhatia (1993, 1995) agrees with this idea when stating that there are genres that are also used to transmit the particular intentions of the researcher. In real life situations genres are focused on their usage context and therefore they may be seen as hybrid genres embedded in different categorisations. This constant and dynamic feature could be supported by Bhatia's (2002: 6) idea on the genre versatility:

[a]lthough genre analysis is seen as applied in concern, and as such puts a heavy premium on conventional use of language, it is versatile and dynamic in nature, essentially explanatory rather than purely descriptive, narrow in focus, but broad on vision, and has a natural propensity for innovation and exploitation.

Having said this, it could be concluded that not every text is a pure instance of a particular genre. Chimombo and Rosebery (1998) stated that texts could also be combined in structure and discourse depending on their communicative purpose.

This innovative view of genre analysis could be directly applied to the emergence of new types of texts such as Med-E-Pops or, as cited at the beginning of this section, to online news that has evolved due to certain social and professional demands. These type of texts emerged with the emergence of new technologies. Fortanet *et al.* (1999: 94) described this emergence as:

A drastic change was brought about in the mid-90s when, along with an enormous—almost uncontrolled—expansion of the network, the commercial possibilities in both economic exchange and advertising products have completely altered the initial concept of an academic Internet. This transformation has had a rippling effect in the way genres—originally designed for a different context and situation- are being reproduced on the net.

Finally, I would like to close this section by bringing tradition and previous knowledge towards the concept of *genre* this dissertation uses with the analysis of potential informality in the Med-E-Pop genre. With Bhatia (2004, 2008, 2011), this piece of research also aims to convey the idea that genres are versatile and are constantly creating and developing new patterns. Genres cut across disciplinary boundaries and yet they show disciplinary varieties. This so called genre hybridity is a result of the bending of conventions that triggers us to do something else; the embedding that exists among genres and therefore it is the result of genres mixing or crossbreeding. All the above, along with the external expectations from the potential audience, is the background from which Med-E-Pops have been conceived and therefore, have been crafted and launched.

### **1.2.5 Electronic genres**

The advent of new ways of communication and specifically of the Internet, has allowed many genres to be disseminated among their discourse communities in a faster and more accessible way. In fact, the Internet has also influenced, and in some ways constrained, some genres' conventional features. The purpose of this section is to reflect on how the Internet has shaped the Med-E-Pops genre by reviewing previous studies on electronic genres, also called digital genres, usually drawn from previously existing written genres. This electronic or digital framework mentioned below may have introduced drawbacks, constraints or advantages in specific genres. I aim to review some of the scenarios of what is known as digital or electronic media to later discuss whether these genres are shaped by this circumstance; that is, being disseminated on the Internet. Specific linguistic features resulting from the process of genre adaptation to the channel of publication are also commented on in section 1.2.5.2. I therefore turn to previous studies on web-mediated texts such as: Yates and Orlikowski 1992; Orlikowski and Yates 1994; Shepherd and Watters 1999; Crowston and Williams 2000; Crystal 2001; Giltrow and Dieter 2009; Berkenkotter 2012 or Luzón-Marco 2012 among many others to establish the theoretical background for this dissertation.

#### **1.2.5.1 *Digital or electronic genres***

Several significant current discussions about these electronic or digital genres are; i) whether these genres are new or emerging communication media, ii) whether these genres are embedded to form new patterns of communication, iii) whether

these genres are being considered as new genres because they are just composed of web-mediated texts and therefore can be approached from traditional genre theories although the Internet as a medium of communication has intrinsic and unique features or iv) whether we can define such a broad, international and varied readership or whether it is more realistic to describe just the presupposed role of these electronic genres' discourse communities.

i) *Whether electronic or digital genres are new or emerging communication media*

Crowston and Williams (2000) state that from the point view of communication the World Wide Web is growing so quickly that new types of communication are subsequently being created. These scholars examine this phenomenon in order to observe whether some old genres are adapted to take advantage of the linking and interactivity of this new communication medium or whether they are emerging communication genres. As the Internet has rapidly evolved thanks to this last decade of open access, the Web has become not only successful but also essential for our daily life. This means any type of user or Internet consumer can have access to the Internet and its endless possibilities. For instance, a wide range of different organisations and institutions have made the most of this varied and broad potential audience and have tried to reach diverse groups of Internet consumers by creating new communication genres (see for instance Miller 1984). We must consider the Web as a social phenomenon that supports diverse communicative practices. Crowston and Williams (2000: 30) state:

Communicative genre is defined generally as accepted types of communication sharing common form, content or purpose, such as an inquiry, letter, memo or meeting. Note that genre is not simply the medium of communication—a memo genre may be realized on paper or in an electronic mail message (two different media), while the electronic mail medium may be used to deliver memos and inquiries (two different genres).

Therefore, it can be seen that the medium in which different communicative practices take place does influence genres. Like these authors, we may wonder how the adoption of a new communication medium—in the case of this dissertation the Internet—might be leading to the adaptation of existing genres and the emergence of new ones. Since Aristotle, scholars have attempted to classify communications into categories or genres. It could be suggested that Internet users may socially categorise different communicative genres available on the Internet by their communicative action, their purpose and their form.

Some users may identify a genre by its form and other users by its linguistic features. However, Crowston and Williams (2000) argue that most genres imply a combination of purpose and form, such as a newsletter, which communicates the news of the day, including multiple short articles that are distributed periodically to subscribers or members of an organisation as seems to be the case in Med-E-Pops. In addition to new genres born from the wider use of the Internet as a mean of communication, as is the case with e-mails, the existence of Med-E-Pops leads us to wonder if they were simply adaptations embedded in a different pattern of communication as the following section discusses.

ii) *Whether these genres are embedded to form new patterns of communication*

This section reflects on how genres can be embedded to form more complex patterns of communication. They can for instance be recognisable by a pattern (Bazerman 1994) comprising a genre system or they can be a set of genres or a repertoire used within a community with different frequencies and for different communicative practices (Orlikowski and Yates 1995). From a discourse community perspective it should be considered that any genre may be hard to understand for someone outside a community (see section 1.2.3). Freedman and Medway (1994) suggest that the capacity to recognise a particular genre is one sign of membership of a particular community. Therefore, it could be concluded that incomprehensible genres may even be used deliberately to defend positions of privilege. As mentioned above, Orlikowski and Yates (1995) suggested that in a new situation individuals will draw on their existing genre repertoires, reproducing genres they have experienced as members of their community. In the case of this piece of research the Med-E-RAs under study are Med-RAs, which have first been published in an online journal version before being printed.<sup>24</sup> Institutions and specialised journals are distributing their journal articles electronically. This fact makes these publications easily available for a broad academic community and also to the Internet user community with access to these publications. Agreeing with the fact that the Internet promotes new and faster ways of disseminating texts or documents I still wondered whether electronic genres differ from the genres they may be drawn from. Genre users are free to modify a genre and to communicate in a way that invokes only some of the expected aspects of a form. According to Crowston and Williams (2000) if these changes become repeatedly used, they may become accepted and used together with or instead of existing

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24 They are not proofread versions, but early versions available on the net.

genres, extending or even altering the genre repertoire. However, it seems rather difficult to define the exact point at which a new genre emerges from an old one. As mentioned above, the key issues regarding the definition of genre relies on social acceptance, which may take years. Like Crowston and Williams (2000), I consider that after a period of coexistence, the new combination of form and purpose may become generally recognised and named as a separate genre, as could be the case with Med-RAs, medical popularizations and Med-E-Pops. Genres may also be accepted in different communities at different rates. Therefore, the emergence of new genres could be one sign of the formation of a new community with new communicative practices. Yates and Orlikowski (1999) suggested that these new genres are most likely derived from earlier genres that might have seemed appropriate to the situation. In addition, Crowston and Williams (2000) also conclude that the genres they found and classified on 100 web pages are reproduced in or adapted to the new media. They strongly recommend that web designers be aware of users' expectations of a genre. Most of the websites are public and easily available but their management is not centralised or rule-related. In other words, there is not an institution or shared framework that establishes a common basis to publish or communicate with their potential communities. As Orlikowski and Yates (1995) see it, the leader of every website is the website developer rather than the recipient of communication. Crowston and Williams (2000) add that as the audience is unpredictable, there is no clear separation of communities into different channels of communication as seems to be the case with Med-E-Pops. However, the issue of genres on the Internet may seem understudied due to the rapid development of new genres of communication, the media and the experimentation of the potential genres.

iii) *Whether electronic or digital genres can be approached from traditional genre theories although the Internet as a medium of communication has intrinsic and unique features*

Having observed the general idea of the Internet as a genre medium, this section traces its theoretical review back to Askehave and Ellerup Nielsen (2005) and their specific approach to traditional genre theories applied to digital genres as non-linear multi-modal web-mediated documents. Accounting for Swalesian genre theory based on the relationship between discourse and social practices in academic settings, they try to validate the incorporation of media elements into the concept of *genre*, taking into account particular characteristics of the digital setting such as the browsing and reading elements of web mediated genres. Since the 80s many insightful approaches to the definition of genre and genre

studies in ESP have been developed as mentioned in previous sections (c.f. Swales 1990; Martin 1992; Bhatia 1993; Eggins 1994; Miller 1994; Bazerman 1994, etc.). However, all these studies were conducted in speech or print formats. In the last decade, the role of the Internet as web-mediated communication in our everyday life has aroused interest (Dickey 2004; Myers 2012; Luzón-Marco 2010, 2012; etc.). Like Askehave and Ellerup Nielsen (2005) this dissertation does not explore how or where these electronic genres are used, but validates these genres as research objects. Needless to say the concept of *medium*, which is intrinsic in the definition of digital genres, has to be applied when defining Med-E-Pops and its genre. According to Askehave and Ellerup Nielsen the Internet as a medium has several features which significantly influence and contribute to “the way the web-mediated genres look and are used” (2005: 121). This dissertation does not intend to contribute to the development of a systematic characterisation of web-mediated genres since my core interest is to explore the depersonalisation of Med-E-Pops from the concept of *voice*. However, this dissertation must consider the intrinsic influence of the digital genre—specifically online medical knowledge dissemination journals—on the texts analysed. Electronic genres could be conceptualised as goal-oriented (Swales 1990). The communicative purpose therefore constitutes the rationale for the genre. This fact encourages particular text structures and enhances the use of conventionalised lexico-grammatical and rhetorical strategies. Following Swales’ (1990) three-level genre model, Askehave and Ellerup Nielsen (2005) studied one single homepage, focusing on three constituents of a genre: the communicative purpose, the move structure and the rhetorical strategies. Askehave and Ellerup Nielsen (2005) concluded that the communicative purpose of the homepage under study could not be approached as a single text in isolation. They state that to analyse these digital genres we should use the context of the homepage and its discourse community. The move structure of digital genres is graphically arranged according to their communicative purposes. However, generally speaking these genres leave room for rhetorical variation depending on the genre model. However, it could be argued that establishing moves in a digital text could increase ambiguity. There is a certain degree of disagreement regarding which criteria should be used for identifying move structure (c.f. Paltridge 1994). Whereas Swales (1990) recommends focusing on lexis, grammar and rhetorical functions to establish moves, Eggins (1994) relies merely on lexis and grammar, Martin (1992) relies on the layout of a text—headings, subtitles, etc.—and Bhatia (1993: 87) believes that “the ultimate criteria for assigning discourse values to various moves is functional rather than formal”. Rhetorical strategies, as suggested by

Swales (1990), are strongly influenced by the content and text style. Moreover, this dissertation argues that several rhetorical strategies may be used to display particular communicative intentions regarding the voice of Med-E-Pops writers as shown in the Discussion of Results chapter (Chapter 3).

*iv) The role of discourse communities in electronic genres or digital genres*

It is essential for the global understanding of the nature of Med-E-Pops to reflect on the role of the potential readership as recipients and electronic information consumers. Therefore it should be considered here that web-mediated genres, such as homepages, are top-level documents which introduce the user to the general content of the site and also function “as the official gateway of a web site as it enables the reader to access and navigate the site by providing navigational tools or links that branch off into the web site as a whole” (Askehave and Ellerup Nielsen 2005: 124). Content can be accessed from the main website or it can also be reached for instance by *secondary paths* such as “Googling” pieces of information that readers wish to find out or read about. Homepages, as hosts of digital or electronic genres, could be compared to newspapers since they have front pages, promotional news, eye-catching headings, etc. Homepages, however, can go beyond traditional existing genres due to their multimodal properties. They have visual aids, sound, flash images etc. Homepages present a selection of topics which are governed by what the authors believe will satisfy the immediate information need of readers when they consult the web page. The primary communicative purpose of the homepage may seem to present a reading mode as a social practice. The choice of information, design and layout of the homepage is centred on the recipient, although the sender has a crucial image-creating role. As a whole the homepage, as a navigating option, mainly provides access to the website content through different frames and different spaces or moves—greeting, identifying the sender, indicating content structure etc. A sequence of moves is created through which the reader could go on his/her own path. According to Askehave and Ellerup Nielsen (2005), there is a vague tendency towards a preferred text organisation which is similar to that of newspaper front pages: the most important information first and the least important last. Since Med-E-Pops are embedded and hosted in medical dissemination online journals, they also follow this tendency identified by the authors.

It could then be considered as McLuhan (1962) states, that the medium of digital genres is the message itself. Focusing on the theoretical framework related to this dissertation, the aim of this section is to stress that one of the



most remarkable features of Med-E-Pops as a genre hosted on the WWW is the presence of hypertexts or hyperlinks. They are presented as *clickable objects*—underlined words or icons that allow the reader and navigator to read further and to go from one website to another website. The functional value of links is concerned with the relationship established between the chunks of information being connected. These hyperlinks may present forced reading, due to so many potential required reading stops. Tosca (2000: 3) suggests that the flow of meaning is not interrupted by hyperlinks; on the contrary “they enliven them”. The Med-E-Pops genre studied in this dissertation does not exploit the multimedia potential generated by the WWW portrayed in music, video, animation etc. inviting the reader to participate actively in assigning meaning in the process of text consumption (Landow 1997; Bolter 2001). However, Med-E-Pops, like other digital genres, present non-linear texts. Their sender-oriented texts include hypertexts that are electronically linked to some text items. This network of texts (Landow 1997; Fritz 1998; Bolter 2001) is a non-sequential text system, which is recipient-oriented to facilitate explanations and further readings on potentially difficult aspects of the text contents. From an analytical viewpoint, scholars such as Landow (1997), Bolter (2001) or Askehave and Ellerup Nielsen (2005), point out that there is no clear distinction between text production and text reception on the Internet. Above all, the most remarkable aspects is that readers can choose where to begin their reading and where to end it. They choose their own path and create their own hypertext system, becoming a kind of web-author. Therefore, as mentioned above, one of the most remarkable features of web-mediated texts is the effect of hypertexts on web-users. Sosnoski (1999: 135) argues that the existence of hypertexts linked to some chunks of information “places certain constraints on the reading pattern” which lead the reader to over read. Hyper-reading also reduces any potential linearity regarding the traditional reading comprehension of a text. However, many readers have been taught how to filter, skim and scan texts in their academic education to improve their reading skills by disregarding the existence of hyperlinks and hypertexts. Finnemann (1999: 25) states that the existence of non-linear texts is not due to the recent appearance of hypertexts and web-mediated texts:

In ordinary text you are supposed to move from chapter 1 to chapter 2 while in a hypertext you are supposed to choose your own serial order at various stages on the journey. But even so, you still have to choose, you have to determine the order in which you will read the text and this order will always have to be sequential. The optional freedom in hypertext systems is not a freedom from sequentialized linearity, since the user cannot make more than one choice at a time.

Finnemann (1999) highlights the fact that a hypertext is a text system which has the ability to activate at least two modal shifts in the reading process; the *reading-as-such mode* and the *navigating mode*. The first deals with the traditional reader position with sequential and guided reading, and the second allows the reader to navigate the site and actively construct his/her own reading path through several windows or sites. Askehave and Ellerup Nielsen (2005) state that when consuming web texts, the web user employs two different cognitive capacities and demonstrate two different types of behaviour when s/he shifts from the reading to the navigating mode and vice versa. The concept of *modal shift* in hypertexts reading offers an interesting perspective on web genres and is a key distinction in the traditional genre analysis model. Therefore Askehave and Ellerup Nielsen (2005: 127) suggest that the analysis of web genres should be centred around the two models: “[w]hat we need then is an extension of the genre model to account for the fact that a web text also functions in the navigating mode where the text, due to its media constraints, becomes an interactive medium, used actively to navigate the web site”. The genre model has been widely proven to be useful for describing the characteristics of one-dimensional genres. However, since hypertexts are essential in web-mediated genres the image of a two-dimensional genre model is inherently necessary. Askehave and Ellerup Nielsen’s (2005: 127) solution is to “reconsider the genre model; keep the basic premises of the model (the three-level analysis of the communication purpose, move structure and rhetorical strategies), but add the hypertextual mode (Finnemann’s concept of navigating mode) to all levels of analysis, thus producing a two-dimensional genre model”. Figure 1 schematically represents this two-dimensional genre model:

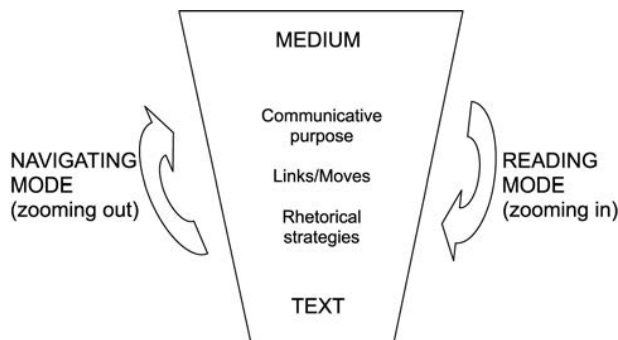


Figure 1. Askehave and Ellerup Nielsen (2005: 127). Visual representation of the two-dimensional genre-model.

This model then visually represent that: i) Users of web documents carry out modal shifts—shifts between acting as a reader and acting as a navigator. ii) Shifts are circular—there is a constant change between reading and navigating. iii) When in the reading mode, the reader zooms in on the text and uses the web document as if it was a printed text (basically reads the texts). iv) When in the navigating mode, the navigator zooms out of the text and uses the web document as a medium (exploiting its navigation possibilities). v) An account of the generic properties of genres on the web involves three-level analysis of both modes:

a) In the reading mode, the text must be characterised in terms of its communicative purpose, moves, links and rhetorical strategies.

b) In the navigating mode, the medium must be characterised in terms of its communicative purpose, links and rhetorical strategies. This two-dimensional model considers the functional properties of the text and the medium from the point of view of the text producer. Bhatia (1993) and Swales' (1990) genre analysis model was based on a sender-oriented view and on the communicative and functional purposes of the genre. The roles of the recipient may seem to be unexplored. However, the study of the roles of the recipients opens a broad and complex research field, which this study will leave for later research for the purposes of simplicity.

The interplay between medium and genre is a key feature of the web-mediated genre. Besides, it cannot be ignored that in these types of texts, the purpose may influence the form. Although Yates *et al.* (1999: 100) claim that: “[i]t is the genres enacted within a medium that establish the communicative purpose of the interaction, not the medium” they later recognise that the medium may play a role in both the recurring situation and the form of a genre. They also admit that when studying web-mediated genres, the researcher is faced with genres which are more than “traditional genres transferred to the net”; in fact web-mediated genres may be substantially different from printed genres because the web genre often exploits the characteristics of the hypertext medium. One of the strongest arguments Askehave and Ellerup Nielsen (2005) put forward to state that the medium forms an integral part of the genre and therefore should be included in a genre analysis model of web-mediated genres is that hyper texts become severely “handicapped” when printed out onto paper and removed from their medium. These scholars conclude that web genres cannot be characterised as genres in isolation from their medium. Although the distinction between *genre* and *medium* may seem to be clear, the boundaries between these two concepts still

remain invisible.<sup>25</sup> What may seem easily recognised or characterised from these electronic genres together with the use of hyperlinks,<sup>26</sup> is the potential informality of the language used on the Internet. However, some general considerations have been included below in the following sections since, contrary to any expectation, the language used in Med-E-Pops is simplified and reduced as far as density is considered, but is never informal.

### **1.2.5.2 *Language and the Internet***

To cater for electronic genres, it is important to take into account Crystal's views in *Language and the Internet* (2001). As Crystal states, the Internet is recognised as a new communication medium. The English language used on the Net is also a variety and has some rules or Netspeak. For instance, Crystal states that in an e-mail we should not write messages in capital letters because it is equivalent to shouting. There are, however, certain contexts where capitals need to be reorganised due to Internet graphology. In fact, a distinctive feature of Internet graphology is the way two capitals are used—one initial, one medial—a phenomenon called bicapitalisation (BiCap): *ScienceDirect*, *DreamWorks*, *GeoCities*, *SportZone*, *AltaVista*, Med-E-Pops etc. In addition, language also has a popular way of creating Internet neologisms by combining two separate words to make a new word or compound: *mouseclick*, *webcam*, *webmail*, *netnews*, *cyberspace*, *hyperlink*, *bugnet* etc. Abbreviations are also known by users of this Netspeak: AFAIK (as far as I know), CUL (see you later), BTW (by the way), TX (thanks), TTYTTT (to tell you the truth), 4E (for ever), 4YEO (for your eyes only) etc.

Linguistically speaking, Crystal (2001: 195) claims, “the Web in effect holds a mirror up to the graphic dimension of our linguistic nature”.<sup>27</sup> A significant amount of human visual linguistic life is already there, as well as part of our vocal life—Web documents from texts to videos. The Web is graphically more eclectic

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25 These scholars acknowledge that their study does not aim to design a systematic characterisation of web-mediated genres as is the case with this dissertation, which aims to observe the depersonalization of Med-E-Pops writers.

26 As has been mentioned in several sections, the hyperlinks used in Med-E-Pops journals are used to lead the reader to the Med-E-RAs abstracts, to the institutions or hospitals to which the lead Med-E-RA researcher is affiliated or on rare occasions to other related Med-E-Pops published in the same electronic journal.

27 “Graphic” here refers to all aspects of written (as opposed to spoken) language.

than any domain of written language in the real world. And the same eclecticism can be seen if we look at the purely linguistic dimensions of written expressions. Whatever the variety of written language we encounter in the paper-based world, its linguistic features have their electronic equivalent on the Web. Among the main varieties of written expressions are legal, religious, journalistic, literary and scientific texts. These are all widely present in their many sub-varieties or genres as is the case with this study. Each of these genres has its own distinctive linguistic character, and all of this stylistic variation will be found on the Web. Crystal quotes the example of the British Library and the Library of Congress of the United States and their catalogues. In his view, what anybody can find is exactly the same kind of language as we would find if we were to visit these locations in London or Washington respectively, apart from the use of different spelling and punctuation conventions.

It can be seen that certain defining properties of traditional written language are altered by the Web. In particular, its staticness is no longer obligatory. As Crystal (2001: 201) states “the software controlling a page may make the text move about the screen, appear and disappear, change colour and shape”. This is not the case with Med-E-Pops as the only hyperlinks found in the Med-E-Pops corpus lead the reader to the Med-RAs abstract, the institution of the writer and/or more Med-E-Pops on the illness described, contained in the same Med-E-Pops electronic journal. As the user moves his or her mouse-controlled arrow around the screen, the switch from arrow to hand will be accompanied by the arrival of new text. In this dissertation, this can be seen as one of the most interesting features of Med-E-Pops: we are not dealing with static and plain texts—as Landow 1997; Finnemann 1999; Crowston and Williams 2000; Bolter 2001 and Askehave and Ellerup Nielsen (2005) comment when defining the implication of hyperlinks—but with dynamic ones. The Med-E-Pops under study cannot be understood as fully interactive regarding the use of hyperlinks, since the hyperlinks found just guide the reader to the three different kinds of electronic references mentioned above.<sup>28</sup>

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28 Crystal (2001: 203) defines hypertext links as “the jumps that users can make if they want to move from one page or site to another. The hypertext link is the most fundamental structural property of the Web, without which the medium would not exist. It has parallels in some conventions of traditional written text—especially in the use of the foot note number or the bibliographical citation, which enables a reader to move from one place in a text to another—but nothing in traditional written language remotely resembles that dynamic flexibility of the Web”.

### 1.3 MEDICAL POPULARIZATION

The number of journals carrying reports of the most newsworthy findings of science for a lay audience has dramatically increased in recent years (*c.f.* Barona 1990; Nwogu 1991; Garcés and Sánchez 1998; Gil-Salom 2000; Bensaude-Vincent 2001; Askegave 2002; Gallardo 2005; Garzone 2006; De Oliveira 2006; Hyland 2010a; Kerman 2012; Herrando-Rodrigo 2012; among many others). Needless to say, academic texts are central to scientific knowledge. These texts are constructed through the negotiation of claims between authors and reviewers, editors and readers, while written pieces for the general public seek to link issues in the specialised domain to those of everyday life. It was in the 17<sup>th</sup>, 18<sup>th</sup> and 19<sup>th</sup> centuries that the need to simplify accounts of findings in order to make science comprehensible to a non-specialist public became more acutely felt. Meadows (1987) believes that in the 17<sup>th</sup> century there arose an urgent need to disseminate the mathematical approach to the knowledge of the world. However, the narrative used to describe these scientific hypotheses prevented a general comprehension. Therefore, scientists became aware of the need to display science in a more accessible way to the non-specialised audience. Also, in the late 18<sup>th</sup> century and early 19<sup>th</sup> century, scientific books from various disciplines were paraphrased and adapted into shorter texts and were periodically published in specialised research journals. Myers (1989b) for instance narrates how science was even introduced to children and women in the late 18<sup>th</sup> century and early 19<sup>th</sup> century though different novels due to public demand.<sup>29</sup> He concludes (1989b: 171): “Popularisations like these shaped the non-scientists’ knowledge of science more than the original works of scientists; more than that, they shaped non-scientists’ views of scientific authority. For popularisations do not simply transmit or water down the writing of professionals, they transform scientific knowledge as they put it in new textual forms and relate it to other elements of non-scientific culture”. In addition, the progressive replacement of specialised journal articles by scientific books as the only channel for sharing knowledge, in the 20<sup>th</sup> century established a worldwide channel of scientific knowledge dissemination and authorship claiming. Apart from this, in the early 20<sup>th</sup> century scientific knowledge dissemination versions were facilitated by the radio and

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29 For instance Beer (1996) researches the role of science in literature. He emphasises that Victorian writers tended to overlap scientific and literary discourses. Meanwhile, Victorian scientists cited classical writing in their works for several functions: some social, some illustrative and some argumentative.

television. Moreover, the advent of new technologies and communication media enabled non-specialised readers to access information, which was mainly and primarily designed for specialised readers. Nowadays, these transformations or adaptations of science to suit a lay public allows the potential audience to interact as consumers, whereas in the past interaction took place only between producers. Hence the arrival of new communication technology in the late 20<sup>th</sup> century, as the Internet easily promoted information for a non-specialist public and members of different communities.

Since this study is focused on the study of the writer's voice in medical popularizations published on the Internet, it should be emphasised that, as mentioned above, the use of the Internet is a response to an increasing consumer need for medical knowledge (Herrando-Rodrigo 2012). This global tool that allows the dissemination of constant scientific developments at high speed, provides comprehensible medical adaptations of Med-RAs to a broader audience. This channel of communication feeds the growing community of information consumers, mainly with texts coded in English. These potential readers are: patients in search of information relevant to their immediate medical needs or to their concerns on health prevention or care, and doctors who may lack the time to read about non-specific but field-related literature published every day. Hospitals, practitioners and even specialised health journal sections have designed their own websites to respond to these public demands. Burkett (1973) points out three main reasons for interpreting science to lay readers. The first one deals with the general cultural background that any reader may have regarding science. Also, humans, explicitly or implicitly, are beings with an urge to know about and discover new things. Lastly, readers need to be able to handle the potential union between arts and science and moreover between journalism and science objects.

Therefore, the results from the study of the concept of *voice* that this dissertation has obtained are highly influenced by two features that define the Med-E-Pops corpus under study. The first feature is that Med-E-Pops are a type of popularization. Therefore, the Med-E-Pops genre should share several linguistic or textual conventions and a similar information structure with the genre of popularizations. However, the second feature that characterises Med-E-Pops, is the fact that Med-E-Pops are published on the Internet on reliable webs designed not only for patients but also for medical personnel, which not only modulates but also constrains both Med-E-Pops and the expressive voice of their writers.

Therefore, the research into this emerging genre and the concept of *voice* of their writers led this dissertation to a closer observation of the genre of scientific

popularizations. Firstly, section 1.3.1 summarises some of the reasons why popularizations have been mainly problematised in the field of applied linguistics. However, this summary will be studied further from another angle. In other words, where other researchers have identified potential problems or threats from the popularizations genre, this dissertation has seen opportunities to respond in a reliable way to a public demand from global citizens in the 21<sup>st</sup> century. To justify this argument, section 1.3.2 reviews previous studies on the information structure of medical popularizations. These studies reflect on the issue that certain types of medical popularizations attempt to replicate their Med-RAs counterparts' information structure and scientific content in order to create reliable texts that are accessible to a non-specific discourse community. This dissertation aims to show that despite being problematised, Med-E-Pops also attempt to be reliable Med-RAs adaptations. Chapter 3 will also discuss how Med-E-Pops strike a balance between reaching a non-specialised electronic audience and building trust around a text that "easifies" scientific content without losing scientific rigour. Section 1.3.3 closes with a review on previous research conducted on web-mediated medical accounts—which is the closest piece of research to Med-E-Pops that, to my knowledge, can be found in literature. This literature review enables this dissertation to open a debate between the identified drawbacks from these previously mentioned web-posted accounts and the positive findings drawn from this dissertation analysis regarding the linguistic and textual conventions, information structure and scientific rigour of Med-E-Pops.

### **1.3.1 Problematising the nature and function of scientific popularizations**

Scientific popularizations have very often been problematised as non-academic texts and yet have been considered as a core aspect of a current social debate. In this section some of the drawbacks and criticisms about this genre are introduced to then demonstrate in Chapter 3 how Med-E-Pops have optimised these arguments in order to create a balance between these electronic popularizations as Med-RAs adaptations. Some of the criticisms that this section refers to are related to questionable goals or popularizations, their discourse community, their channels of dissemination, some textual aspects and their internal discourse organisation.

In applied linguistics the genre of scientific popularizations is widely identified as goal-oriented (Swales 1990, 2004). The communicative purpose



of this genre triggers particular text structures and increases the use of certain lexico-grammatical and rhetorical strategies. Critics have argued that the goal of popularizations seems obscure (Gil-Salom 2000; Gallardo 2004). These critics also question not only the fact that medical popularizations tend to offer a magic cure to health problems for instance, but also the fact that these popularizations praise certain medicines, surgery techniques or even health institutions in order to manipulate scientific findings for commercial purposes. It has also been problematised that the consumers and producers of scientific popularizations form the discourse community of this genre. The scientific popularizations producers are those writers who in their articles mediate between the scientist and the lay audience by writing popularizations. To reflect first on who writes what, two seminal works should be revised in this respect: Adams-Smith (1987) and Myers (1986). Two types of scientific popularization writers can be identified in popularization practice; “entrepreneurs of science”—this term was first used by Jones *et al* in 1978, who are journalists that write about science, and a second group composed of scientists who simplify their own work to disseminate their findings in publications such as *Nature* or *Scientific American*.<sup>30</sup> The potential consumers and readers are non-discipline members who do not understand scientific content and want to be updated but with simplified scientific information (Giunchi 2002).

One question that needs to be asked, however, is whether we are also dealing with emerging trends regarding channels of dissemination for scientific knowledge. In other words, the channels of dissemination of scientific popularizations have also been described as a reliable means of knowledge dissemination. Further classifications could be drawn depending on the channels of dissemination of scientific knowledge for instance. Farago (1976) or Jones *et al.* (1978) conducted studies as early as the 70s about the various non-specialised and best-selling newspapers such as *The New York Times*, *Daily Mirror* and *Los Angeles Times* that devoted almost 65% to medical news pieces due to their readers’ demands. With time, this increasing demand has led these widely read newspapers such as *The New York Times* to design special sections—i.e. *The New York Times Health Guide*.

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30 This dissertation does not consider this practice as hybrid genres as mentioned in section 1.2 since these researchers do not create different genres to promote themselves when adapting the narrative of their scientific findings to publications of lower scientific impact but with a wider readership such as *Nature*.

Linguists have also tried to give a suitable definition of scientific popularizations by analysing and problematising different textual aspects of these texts related to the field of applied linguistics: e.g. lexico-grammatical procedures, structure and functions. Most of these text analyses have been carried out by contrasting them with their source text. That is, the RAs published in specialised journals *c.f.* Ciapuscio (1992a, 1992b), Loffler-Laurian (1983) or Myers (1991). Textual studies such as Calsamiglia and López Ferrero (2003) or Myers (2003) deal with traditional assumptions about science communication channels. They question that knowledge travels only one way from science to society. Researchers such as Dubois (1986) or Varttala (1999) have also studied texts in terms of levels of specialisation by establishing clines regarding newspapers articles and RAs. For this dissertation, understanding one of the most interesting aspects regarding scientific popularizations, and Med-E-Pops in particular, is regarding the persuasive purpose of the popularising text and its potential scientific evaluation (Giunchi 2002; Ferrari 2003; Ciapuscio 2003 or Gallardo 2005).

In addition, there are many scholars who state that there are neither internal discourse organisations nor rhetorical conventions to design such popularizations. Gil-Salom (2000: 442) quotes a fragment from the journal Unesco *IMPACT* (1980: 337) which is strictly devoted to scientific knowledge disseminations, stating that: “[f]ew texts exist to instruct those who wish to popularize science; and the subject is infrequently explored in print, outside the publications of organizations directly devoted to it”.

Although there are also arguments against the text structure, the rhetorical strategies and the channels of dissemination of scientific popularizations, these popularizations still deserve closer observation. It should be pointed out that recent popularizations such as Med-E-Pops are, above all, a response to public demand. The dissemination of scientific knowledge outside academia into a non-specialised community is nowadays of paramount importance and has aroused research interest into not only applied linguistics but also into governmental social policies (Kuteeva and McGrath 2012). For instance, Hyland (2009: 164) observes how science journalism “established the novelty, relevance and newsworthiness of topics” turning scientific developments into narratives related to lay people’s concerns. Hewings (2007) reflects on how the popular press creates scientists’ public images and how this type of media portrays their work. Moreover, as patients, we expect to be adequately informed and to participate actively in our own therapy. We demand and need information that doctors are often unable to provide due to lack of time or simply because the medical technologies involved

are too sophisticated to be explained in depth to laypeople. Therefore, complex information needs to be adequately reformulated and made comprehensible for an audience who do not have an adequate scientific background.

Like Giannoni (2008: 215), among other researchers, I also think that: “popularizations deal with the dissemination of scientific findings outside the scientific community”. This fact does not always imply that Med-E-Pops should be simple reformulations of original Med-RAs carried out by a specialised journalist, a practitioner or a lay writer. As Giannoni and researchers like Myers (1989a) state, a key difference between Med-RAs and Med-E-Pops genres lies in the fact that both genres provide contrasting views of science. Popularizations focus on the *objects* of study and the articles on the disciplinary *procedures* by which they are studied.

We must consider that there are also differences in language choices between Med-RAs and their popularizations. These choices not only convey different meanings of both Med-RAs and Med-E-Pops, but also mean that writers or readers of one narrative cannot easily understand the other. Previous studies have stated that scientific popularizations reformulate scientific RAs to clarify concepts. The linguistic strategies used to translate these RAs into popularizations have been observed by different scholars. Calsamiglia and Van Dijk (2004) have explored, among other devices, how popularization writers paraphrase, reformulate or explain when transferring knowledge from RAs into popularizations. Garzone (2006) studied the lower density, frequency of argumentative meta-discourse markers or frequency of technical words inspired by Crismore and Farnsworth (1990), and Guillén-Galve (1996, 2001) studied the complexity of nominalisations in Med-RAs and popularizations, amongst other devices.

These popularizations, which are at first sight written to be read by a lay audience, have also been approached from the viewpoint of the authorial voice (De Oliveira and Pagano 2006). This conceptualisation of voice when reflecting on the potential implications of quoting the writers’ voice or the researchers’ voices has been widely studied by Shaw (1992), Thomas and Hawes (1994), Thompson (1996) or Myers (1999), amongst others.

Other scholars have also focused on linguistic aspects such as the cohesive devices used in scientific RAs and their popularizations (Myers 1991), the variation in the communicative functions of hedges (Varttala 1999) or the distribution and functions of connectives in popular and specialist discourse (Bondi 2012a).

The context of popularizations and therefore the context of the addressee or potential reader has been studied by scholars such as Nwogu (1991), Moirand (2003) or Calsamiglia and Van Dijk (2004).

In general, in spite of the understandable criticisms against scientific popularizations, and after different-levelled analysis of the genre under study, this dissertation conceptualises Med-E-Pops as a response to an electronic and international public demand. The Med-E-Pops genre seems to have optimised some of the criticisms made about scientific popularizations with the aim of turning Med-RAs research processes into highly conventionalised texts published in reliable webs designed for a global literate audience. This readership is not satisfied with just understanding the medical research and its process but also demands scientific rigour of the research and the popularization itself. Therefore, this piece of research turns to previous studies on medical popularizations as journalistic reports (see section 1.3.2) to justify how these journalistic reports attempt to simulate their Med-RAs counterparts to build trust around these reports as Med-E-Pops also attempt to do.

### **1.3.2 Medical Popularizations as Journalistic Reports**

How scientific information is disseminated to lay people has been studied from several angles. This dissertation does not intend to describe a potential cline of the different types of scientific popularizations since that is out of the scope of this study. However, this piece of research must consider the influence of some studies on popularizations (*c.f.* Jones et al. 1978; Kahn 1983; Van Dijk 1985; among others) since their limitations and findings inspired the need to study and contrast RAs with their popularised versions in a more structured or systematic way (*c.f.* Myers 1986; Adams-Smith 1987; Nwogu 1981; among others). This latter analysis cast light onto the interpretation of these dissertation findings due to the fact that the previously mentioned pieces of literature reflect on how Med-RAs, encoded as journalistic reports (see section 1.3.2.1 below), try to simulate in several ways their Med-RAs counterparts in order to create reliable popularised texts. Therefore, it is essential for the global understanding of both the Med-E-Pops genre and the concept of Med-E-Pops writers' voices to conceptualise these popularizations as journalistic reports not only because of their similarities but also because of their nature and functions.

It is important for this section to acknowledge, as mentioned above, some of the angles from which the genre of popularizations has been approached—which in my opinion inspired further and insightful contrastive studies. For instance, Jones *et al.* (1978) researched the means of publication of scientific knowledge in the U.K. (newspapers, radio and television). They concluded that the most representative pieces of news were limited to social interests as far as ethics or scientific morality. They also added that the more disseminated the piece of news attempted to be, the poorer the scientific rigour was in the text. Van Dijk (1985) argues that the previously mentioned study lacks linguistic reflections, although the content approach is highly interesting. Kahn (1983) combines the study of scientific content and discourse processes. In this study, scientific disseminating books and popularizations comprise the corpora. This researcher concludes that the books' discourse and content were denser than the discourse and content included in the popularizations.

Until the last decade of the 20<sup>th</sup> century, scientific popularizations were disseminated in print media (newspapers and magazines) and electronic media (radio and television). The channel of dissemination seemed to be one of the main variables to classify these popular texts. However, the emergence of the Internet as a new, and in some ways unique, medium or channel of communication in the first decade of the 21<sup>st</sup> century may require a reformulation of the former classification. The term *electronic* should be reconsidered due to the fact that *electronic and digital genres* may have displaced radio and television towards another category named *audio-visual media* for instance. An interesting feature to classify popular texts could be the status of the popularizers. Previously, in the introduction to this section two groups of writers were distinguished; researchers who are called upon to popularise their works and the so-called “entrepreneurs of science”.

This dissertation turns back again to Adams-Smith (1987) and Myers (1986) because both authors carry out contrastive studies between Med-RAs and medical popularizations—which is the framework of this piece of research. Adams-Smith (1987) explores contrasting differences in field, tenor and mode of her corpora concluding that discourse is organised differently in Med-RAs and popularizations because each set of texts have different problem-solving structures. That is, Med-RAs and popularizations have different types of discourse not because these texts belong to different genres but because of their textual relationship when presenting and solving the scientific matter regarding the target audience. Myers (1986) argues that these discipline-specific scientific

articles and their disseminating versions are incompatible in academia. However, he points out that popularizations play an important cultural role in society. From his conversations with Med-RAs authors and popularizations writers Myers states that both groups identify the difference between Med-RAs and popularizations genres in the way both genres deal with scientific content—as the results from this dissertation survey-based approach also show in Chapter 2 when dealing with the corpus justification of this dissertation. Myers shows that in addition to the different information levels existing in both genres, there are significant differences regarding textual terms, titles, summaries, introductory sentences, textual organisation or illustrations. Therefore, he states that the pragmatic aspects that lie behind these popularizations—the potential audience, purpose and medium—influence the way information is organised in both genres and also distribute it hierarchically. Whereas popularization journals aim to sell and broaden their heterogeneous, broad market, Med-RAs attempt to reach prestigious specialised journals and prestigious readers. Needless to say, journals and web pages aim to be sold and visited. For that purpose, editors and journalists have to offer convincing and understandable texts to their readers. As these studies indicate, Med-RAs journalistic reports attempt not to differ from Med-RAs excessively in order to build trust around them and the publication channel.

Nwogu (1991) studied popularised medical texts as popularizations written by specialised journalists. He referred to these texts as Journalistic Reported Versions (JRVs) since they are professional medical research reports written by specialised journalists and published in popular science magazines, general interest magazines and leading newspapers—as is the case with Med-E-Pops.

Nwogu (1991) justifies the form, nature and function of what he labelled as JRVs when interpreting his findings in JRVs as Med-RAs projections. In other words, a JRV mirrors Med-RAs information structure and lexico-grammatical choices to build trust around the medical research—as a way of advertising or publicising the research outside academia—and the JRV itself. It is becoming extremely difficult to ignore the fact that in text structure peer reviewed medical journals, information and the lexico-grammatical choices are organised into distinct sections that narrate the different steps of a scientific process. The rigid format used by researchers when writing Med-RAs, known as IMRAD, includes the following sections: Introduction, Method (and Patients), Results and Discussion. Nwogu (1997) adds in a later study that there is even an internal ordering of the information presented in the different sections of Med-RAs. What Nwogu

(1991) claims is that JRVs mirror their Med-RA counterparts by reproducing a highly conventionalised information and linguistic structure. However, we must consider that, as mentioned above, Med-RAs and JRVs have different problem-solving structures regarding the content of the research represented by different embedded types of discourse expected by the channels of dissemination, the discourse community and the genres themselves.

On the other hand, some researchers argue that popularizations do not have a fixed format. Among other researchers, Gil-Salom (2000) claims that a standard format would diminish the imagination needed in order to match the scientific findings and language used. Perhaps the most serious disadvantage identified in literature against popular texts is that scientific adaptations or versions addressed to a lay audience do not always pursue clarity and objectivity. Moreover, controversy and ambiguity are indispensable factors for popularizations to be read. For instance, Gallardo (2005) analyses what linguistic activities are performed to support recommendations in popularised medical texts published in Argentine newspapers. To analyse the linguistic resources used to achieve communicative purposes, she uses Rhetorical Structure Theory. This theory is a method for describing and characterising text structures in terms of relationships that exist between parts of a text. Although this scholar mainly deals with recommendations made to the potential reader of the medical popularization she identifies one of the most common characteristics of medical popularizations, which is the practice of bringing experts', or RAs researchers' voices back to the popularised text again. Reporting the author's voice and their statements not only builds trust and comprehension among readers but also allows the reporters—mediators and writers of these journalistic medical versions—to reinforce their role as research supporters. Gallardo concludes (2005: 833):

The frequency of justification functions expressed as a direct quotation from the expert was observed to be very high. This suggests that justification requires the support of an expert and that such support is of vital importance in these texts. On the other hand, the comprehension and empathy functions do not need the authoritative support of the expert, so they are performed almost exclusively by the reporter. The comprehension-ensuring function is related to the role of the reporter as mediator between the expert and the reader, in this case by reformulating the expert discourse so as to make it accessible. [...] In sum, in order to achieve acceptance of recommendations, the reporter not only supports the main illocutions but he/she lets the expert speak, when the linguistic activity performed requires an authorized voice.

However, it must be noted that this section has not been included with the aim of tracing back to the problematising angle of popular texts (see section 1.3.1) but with the aim of reinforcing the need to investigate the structure of scientific popularizations such as JRVs. Above all, most of this literature review is intended to narrow the review towards research on popularising medical research in order to establish a genre-specific and closer contrastive analysis regarding the Med-E-Pops under study. Therefore, the results of this dissertation indicate that Med-E-Pops as JRVs aim to simulate Med-RAs. They do not attempt to contribute to the idea that medical popularizations lack a fixed format to arouse readers' imagination or to cause controversy and ambiguity. On the contrary, from the viewpoint of information structure, JRVs as Med-E-Pops reflect the writers' willingness to create an accessible but reliable Med-RA adaptation. This intention to cooperate with a lay readership in the understanding of medical research can be clearly interpreted in the structure of medical popularizations explained below. In conclusion, Nwogu's (1991) study is reviewed due to the fact that conclusions drawn from his analysis either about information structure or lexico-grammatical features cast light on both this research process and its data interpretation.

### ***1.3.2.1 The structure of medical popularizations***

As indicated above, this section gives an in-depth review of Nwogu's (1991) study on medical popular texts which in applied linguistics is considered to be central to the genre of popularizations and therefore central to this analysis as well. This researcher mainly focuses on the observation of the structure of medical popularizations and states that "[t]his structure is constrained by pragmatic conditions in the production of popular texts such as audience, purpose and medium of discourse" (1991: 111). Nwogu's (1991) seminal work argues that a lot of attention is being paid to the study of lexical and syntactical changes when Med-RAs are rewritten for different audiences—as a matter of fact this dissertation will also deal with this lexico-grammatical evidence in order to observe and interpret the realisations of the voice of Med-E-Pops writers. However, he states that little is being said about the changes that take place in the discourse structure when these texts are being rewritten, despite the fact that a poorly organised piece of writing could lead to difficulties in understanding the writer's intention (Parsons 1990) or blurring of meaning (James 1984). Like Cooper and Greenbaum (1986) and Swales (1981), Nwogu claims that any piece of written discourse possesses distinctive features of discourse organisation. Therefore, contrary to different assumptions



about the messiness of science popularizations, he offers a full overview on the patterns of discourse organisation. Nwogu applies Swales' (1981) model for the analysis of genres to his study on the organisation of popularization discourse.<sup>31</sup>

I review Nwogu's (1991) study below to observe whether his findings on the information structure of medical popular texts enlighten the analysis and later definition of this emerging electronic genre. To analyse the structure of his 15 JRVs, Nwogu selected two magazines and one newspaper to reflect on varying levels of sophistication in the rewriting of medical research reports for lay audiences. This is not the case, however, in this piece of research, since none of the Med-E-Pops were chosen on the basis of a scale of sophistication. Some of the webs, however, could be considered at first more field-specific than others—*DocGuide* and *New York Times Health Guide* for example.

In line with Swales (1981), these texts were analysed into hierarchical schematic structures or *moves*.<sup>32</sup> According to Nwogu's (1991) analysis of his JRV corpus, texts normally embody the following types of information exemplified below with examples of my own corpus, more specifically with Med-E-Pop21:

1. A brief statement which functions to provide some background to the problem.

*NEW YORK—June 3, 2009—Improvements in diagnosis and treatment over the past 30 years have led to a 17% decrease in the likelihood of death from aneurysmal subarachnoid haemorrhage (SAH), according to a study published online first and appearing in the July edition of [The Lancet Neurology].*

2. An indication of the main research problem.

*Recent advances in diagnosis and treatments including computed tomography (CT) and magnetic resonance imaging (MRI) techniques for detection of aneurysms, dedicated stroke units, and endovascular coiling of burst aneurysms have greatly improved the prognosis of patients who reach hospital in good condition and are suitable for these treatments.*

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31 Nwogu's work is not a replication of Swales' (1981) model since that model is limited to RA introductions.

32 A "move" means a text segment made up of a bundle of linguistic features (lexical meanings, propositional meanings, Illocutionary forces, etc.) which give the segment a uniform orientation and signal the content of discourse in it. Each move is taken to embody a number of constituent elements or sub-moves which combine to constitute information in the move. Nwogu (1991: 114)

3. An indication of the limitations of the previous efforts at resolving the problem (this information may be included in very few texts).

*However, whether these better diagnostic and management strategies have reduced the risk of death and disability from SAH in the general population is not known.*

4. An indication of how the researcher conducted the study and what they set out to achieve.

*To answer this question, Dennis Nieuwkamp, MD, University Medical Centre Utrecht, Utrecht, the Netherlands, and colleagues did a meta-analysis of 33 studies involving 8,739 patients from 19 countries in 5 continents between 1973 and 2002. They adjusted the results for confounding factors such as age and sex, and also examined regional differences.*

5. An indication of some of the positive results obtained.

*Findings showed that despite an increase in the average age of patients with SAH from 52 to 62 years, over 3 decades the likelihood of dying from a SAH has declined from 51% to 35%—a decrease of 0.6% per year. Adjustment for sex had no effect on the reduced risk of death, and a smaller but not statistically significant decrease was shown after adjustment for age—to 0.4% per year.*

6. An indication of some of the methods used in the collection of data.

*Interestingly, case fatality rates in Japan were significantly lower (11.8% lower) than in Europe, US, Australia, and New Zealand. No other regional differences in case fatality were found.*

7. A description of the methods used in the experiments.

8. Some discussions and explanations of specific research outcomes.

*The authors suggest that these regional differences may be the result of variation in the speed of patients' admission to hospital for the early occlusion of the aneurysm.*

9. A statement of the main conclusions of the research report and its implications to the target audience.

*"In future, case-fatality after SAH might decrease even more, owing to new diagnostic and therapeutic methods...[however the focus should also be on case-morbidity]... because of the high costs from the loss of productive life-years and the long-term care of patients with SAH who become and remain disabled from a young age," the authors wrote.*

This researcher observed that information in JRV texts is organised according to the following moves and constituent elements (1991: 115-6):

MOVE ONE: Presenting background information

- a) by reference to established knowledge in the field.
- b) by reference to the main research problem.
- c) by stressing the local angle.
- d) by explaining principles and concepts.

MOVE TWO: Highlighting overall research outcome

- a) by reference to main research results.

MOVE THREE: Reviewing relating research

- a) by reference to previous research.
- b) by reference to limitations of previous research.

MOVE FOUR: Presenting new research

- a) by reference to authors.
- b) by reference to research purposes.

MOVE FIVE: Indicating consistent observations

- a) by stating significant results.
- b) by reference to specific observations.

MOVE SIX: Describing data collection procedure

- a) by reference to authors.
- b) by reference to source of data.
- c) by reference to data size.

MOVE SEVEN: Describing the experimental procedure

- a) by recounting main experimental processes.

MOVE EIGHT: Explaining the research outcome

- a) by stating a specific outcome.
- b) by explaining principles and concepts.
- c) by indicating comments and views.
- d) by indicating the significance of the main research outcome.
- e) by contrasting present and previous outcomes.

MOVE NINE: Stating research conclusions

- a) by indicating the implications of the research.
- b) by promoting further research.
- c) by stressing the local angle.

For the benefit of later analysis of Med-E-Pops, this section reviews Nwogu's (1991) description of JRVs moves and the corresponding communicative intentions of these moves in an attempt to cast light on the Med-E-Pops genre definition. His own examples are included to support with textual evidence some aspects that are not replicated in the Med-E-Pops under study (see move 7 for instance). According to this researcher's seminal work on medical popularization structure, the main function of move 1 is to provide information, which serves as a background explanation to the Med-RA controversial or current topic. Using the present tense, prepositional phrases and temporal adverbials this move also reinforces the importance of the research sometimes carried out in leading/developing countries by presenting information in a persuasive and anecdotal way (e.g. *In Britain, around 15,000 couples are affected by the...; When a woman has her first baby she runs a much greater risk of toxæmia than in subsequent pregnancies.*). Move 2 introduces the main outcome of the research being popularised using one or two sentences formulated in the past tense or as a passive sentence: (e.g. *New research by Dr. Lawrence Young and his colleagues at Birmingham University's department of Cancer studies has shown how the virus enters these cells.*). Move 3 provides the information required to assess the contribution which the research claims to make to the field. This move contains information which tends to place the research being popularised into an environment of on-going research in the field: (e.g. *The cause of this condition is not known and no therapy has proved effective.*). Move 4 refers to the purpose of the research: (e.g. *The investigation formed part of a long-term research project known as the Bogalusa Heart Study, which is monitoring the risk factors in children whose parents have suffered heart attacks.*). In move 5 the writer reports using past simple tenses those aspects of the main research outcomes which he/she considers to be of interest to the reader: (e.g. *The researchers also found no change in breast cancer risk in women who used high progesterone potency.*). Move 6 presents in a single complex sentence the discussion of aspects of the process of data identification, selection and delimitation as well as the procedure for experimentation, using past simple or passive constructions; that is, the method section of the Med-RA (e.g. *Forty-six women who gave positive results were placed at random in either a group receiving treatment or in a group receiving placebo.*). Move 7 includes JRVs involving laboratory tests or experimental work. This move is characterised by reference to statistical figures and measurements if included in the source RA. For Nwogu (1991) move 8 constitutes the major move in the JVR because it states most of the main observations made by the study and contrasts them with

similar observations made in related studies. The reporter presents the reader with the comments and views of the researchers themselves as well as those of other researchers about the results obtained in the study. This researcher found that this move is characterised by the use of the following linguistic features: rhetorical questions to explain principles and concepts, simple present tense forms to explain principles and concepts, reporting verbs to indicate comments and views, direct quotations from the researchers, metadiscursive clues, exemplification and explicit lexical clues to contrast present and previous research. The last move that Nwogu identifies, move 9, attempts to present the views of the authors of the source report on the possible contribution which the study has made to the field. This move also contains information on the implications of the study and the need for further research into the issue.

Nwogu (1991) indicates that the moves he identifies are the nine possible moves which may be realised in a typical JRV text. However, he acknowledges that not all the popularizations he analysed were organised into these nine moves. This is the case with *Med-E-Pops*—as shown in Chapter 3, mainly consist of four moves. That may be due to the fact that he wanted to observe JRVs from different publications and with different status. This is not the case with the popularizations in my corpus since all of them present a similar discourse structure regardless of their source of publication. However, Nwogu (1991) indicates that as far as medical popularizations are concerned there is always a hierarchical order for the organisation of moves in the text although he argues that this fact does not imply total uniformity in the way moves are ordered—although there is a tendency for the moves to occur in order. Van Dijk (1985) characterises the structure of the news discourse production in four principles: a) important consequences come first, b) details of an event or actor come after a general description of the event or person, c) causes or conditions of the events are mentioned after the event and its consequences, d) context and background information comes last. This characterisation is similar to JRVs except for the last principle. Instead, JRVs present what Nwogu identified as move 8. Similarly, Burkett (1973) states that journalists follow the Description, Explanation and Evaluation (DEE) system to present news.

In line with Nwogu, it could be agreed that the fact that there is a tendency for information in JRV to be organised according to an identifying pattern suggests that the production of these popularizations is motivated by different aims (research promoting, lab marketing etc.). He acknowledges that there is not one sole possibility for popularizations schema and adds (1991: 120):

The JRV, as indeed all genres, is constrained by social and professional routines of science journalists in institutional settings, on the one hand, and the need for an effective cognitive processing strategy of popularized science information by both writers and readers, on the other. Thus, despite the fact that what is being reported in JRV texts is scientific information and that most of the writers of JRV texts are scientists turned journalists, the text still conforms to the demands of a “five-W” beginning demanded by newspaper journalism. The five-W beginning means packing the “who-what-where-when- and-why” into the first few sentences.

Therefore, there is a need to structure popularizations for both writers and readers to ensure the reception of scientific information that for different reasons or interests becomes journalistic information. Therefore, it could be identified that the typical JRV move structure begins with the research story trying to hook the potential reader. It continues with a more or less sophisticated five-W structure. Funkhouser *et al.* (1970) warns journalists that failing to consider this structure may risk losing newspaper readers.

Despite the arguments against popular texts (see section 1.3.1), JRVs as popular texts stand out as being highly conventionalised structured popular texts mainly addressed to a non-specialised audience outside of academia. Since this potential audience looks for reliable texts, these readers turn to reliable magazines, newspapers or non-specific journals that disseminate Med-RAs adaptations which are both easy to understand and faithful to the scientific rigour of the Med-RAs they report. Specialised journalists who have the necessary training and qualifications to create these texts appropriately write these Med-RAs versions.

Having reviewed here that part of the information structure of JRVs that definitely casts light on this Med-E-Pops analysis, discussion and interpretation of data (see Chapter 3) it could be inferred that two JRV aspects mentioned above still remain unrelated to the Med-E-Pops under study. One is the role of the reporter and the other is how the channels of dissemination define and constrain these popular medical texts. The role of the reporter as mediator is a core issue in this dissertation since it is approached through the study of the concept of voice of Med-E-Pops writers. Since this is an aspect of paramount importance for this piece of research, section 1.4 will be devoted to it. The influence of the channel of dissemination—in this case non-specialised electronic publications—unexplored in Nwogu’s (1991) study, needs to be reviewed in order to investigate the genre of Med-E-Pops, define it and also observe whether this genre influences the realisation of the writers’ voice.

Therefore, section 1.3.3 deals with the review of previous literature on popularised versions of Med-RAs published on the Internet as web-posted accounts of Med-RAs. The aim of the following section is to start a debate about the issue of disseminating medical popularizations on the Internet. That is, whereas studies such as Giunchi's (2002) indicate that recent electronic popularised texts disseminated on the Internet attempt to be pseudo-scientific, ambiguous and obscure, Med-E-Pops contribute to an opposed conceptualisation of these medical popular texts disseminated on the Internet (see Chapter 3). Med-E-Pops build trust by simulating Med-RAs using fixed textual and linguistic conventions, removing any subjective writers' intervention from Med-E-Pops and depersonalising the voice of Med-E-Pops writers.

### **1.3.3 Medical Popularizations as Web-Posted Accounts**

The aim of this section is to start a debate about medical popular texts published on the Internet. This section reflects on the studies by previous critics concerning popular texts disseminated electronically (Giunchi 2002; Herrando-Rodrigo 2010) and a slightly different interpretation drawn from this piece of research findings concerning the textual and linguistic conventions and the information structure of this so called new-born genre under study—the genre of Med-E-Pops.

Therefore, having reviewed above the most insightful views regarding medical popularizations such as JRVs, a question that needs to be answered is whether the channel of publication, the Internet, and the non field-specific e-journals foster informality in the genre and therefore convey low reliability due to their potential lack of scientific rigour. Since these popular texts are adapted to a worldwide readership, writers may feel tempted to simplify content and language excessively in order to facilitate understanding and engage with an international electronic readership. Furthermore, the open access of these highly appealing publications could also be a source of advertising (labs, institutions, etc.). To answer this research question I review below a study on web-posted accounts (hereinafter WAs) drawn from Med-RAs to frame and interpret the results obtained in Chapter 3 regarding this issue. To my knowledge, Giunchi's (2002) study on the information or misinformation of Med-RAs when translated into WAs is the study that best mirrors how Med-RAs are adapted to this electronic medium of publication and its potential readership—the closest study to Med-E-Pops available in applied linguistics literature.

In her study on medical literature addressing lay people on line, she states among other things that while complex information is reformulated and made comprehensible for lay readers, descriptions of data collection procedures are left out. She adds that the popularising practice involves a process of selecting, restructuring and reformulating information in order to construct a story-line. The combination of this practice together with strategic linguistic choices creates an accessible and appealing narrative that encourages “unjustified expectations that a ‘magic cure’ is to be found on the Net” (2002: 271). However, in this dissertation’s understanding the advent of new technologies such as the Internet has both fostered specialisation—Med-E-RAs—and promoted information for a specialised and non-specialist public—Med-E-Pops.<sup>33</sup> Obviously, the Internet also “feeds” information to consumers who are outside the medical research community. Therefore, to disseminate medical knowledge into this growing electronic discourse community, “easified” versions are written by medical correspondents and specialised journalist who, according to Giunchi (2002), translate the content of serious original papers on issues concerning life, illness and sex, to meet the needs and expectations of the general public.<sup>34</sup>

Moving on to textual evidence, it should be noticed that although Med-RAs and their counterparts and popularised versions deal with the same medical issues, significant differences could be identified as regards their respective goals, genres and lexis. Giunchi (2002) points out that the main strategies adopted by medical correspondents and journalists writing on the web when translating the original Med-RAs into WAs are related to; 1) the discourse organisation, 2) the titles, 3) the opening move, 4) direct and reported speech, 5) the density and organisation of information and 6) the cohesion and reference described below.

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33 Needless to say in the Med-E-Pops corpus selection, some of the web sites consulted are specially designed for medical professionals who may lack the time to read all the medical literature published every day (i.e. *DocGuide*). Besides, medical professionals can be academically updated by checking for instance *Medline*, which is the electronic equivalent of Index Medicus. In these web-homes, abstracts are available at no cost via the Internet, while journal subscribers access journal issues online before publication in print copies. Therefore, a medical specialist can also consult these synthesised articles accepted for publication by specialised journals during the preceding weeks.

34 As I see it, people expect to be adequately informed and to participate in their own therapy. However, doctors are not always able to provide all the information we as patients would like to have. Therefore, medical popularizations allow complex information to be adequately reformulated and made comprehensible for people who have an “inadequate” scientific background.



This researcher insists on the idea that popularizations tend to omit relevant material from the original paper. In so doing, they provide a mystified version of the original source and they may even mislead their readers. Contrary to this interpretation, Med-E-Pops give evidence to support that these texts do not intend to mislead but to engender trust in both Med-E-RAs and Med-E-Pops. The following example aims to illustrate this statement:

<i>Med-E-RA4</i>	<i>Med-E-Pop4</i>
(1) Subjects were 40 participants (33 men and 7 women) with mild AD and 115 elderly drivers without dementia (60 men and 55 women).	University of Iowa researchers studied 40 drivers with early Alzheimer's disease and 115 elderly drivers with no diagnosis of dementia.

As Chapter 3 will show, the space limitations provide justification for the reduced length of the popularised texts. In other words, the extension of the Med-E-Pops forces the writers to synthesise Med-RAs information. Like Giunchi (2002), this dissertation also adds a contribution to the fact that Med-RAs and medical popularizations belong to different genres as they are written for different audiences and with different purposes. However, unlike WAs, Med-E-Pops do not aim to misinform their potential readers. Med-E-Pops aim to make the research displayed in Med-E-RAs understandable and accessible for a varied and international audience; this audience ranges from field-illiterate readers to medical personnel. According to Giunchi, while popularization writers construct “human-interest stories” they organise their narratives according to a sequence in which individual patients and not the scientific activity are the subject. The data obtained in this piece of research suggest, however, that Med-E-Pops look for balance between human-interest topics about the latest medical research findings and scientific journalistic reports that seek scientific rigour and inform rather than misinform. I will now review in depth the main strategies identified by Giunchi (2002) and adopted by writers when creating WAs. Therefore, I will be able to observe to what extent Med-E-Pops contribute to a mystified version of the original source (Giunchi 2002) or on the contrary whether they contribute to creating a text which does not intend to misinform.

1) As regards the discourse organisation of web-posted accounts, Giunchi (2002) considers them as different set of texts by their scientific counterparts although they share the same topic. One of their main characteristics is that WAs have a story line as all narratives do. They lack a canonical format and in Giunchi's words (2002: 277) “[a]gainst which information may be mapped” but this fact

does not imply they also lack specific rhetorical rules or schema. However, contrary to these findings, section 1.3.2 presents how Med-E-Pops attempt to establish a canonical order as Chapter 3 later explains in depth. 2) Med-RAs and WAs discourse organisations are also different as regards how titles are written, the amount of information contained in the proposition that make up titles and in the level of abstraction of complexity. Regarding titles, Giunchi (2002) states that web-posted accounts must promote an emotive appeal by suggesting a possible solution to a specific medical problem e.g. *New drug combination prolongs colon cancer patients' lives, study says*. On the other hand, Med-RA titles convey the complexity of the problem addressed in the text with the maximum distance and objectivity possible. The following example from Giunchi's (2002: 278) work on WAs aims to exemplify this:

(RA2) *Risk of breast cancer with oral contraceptive use in women with a family history of breast cancer.*

(WA2) *Early oral contraceptive formulations linked to breast cancer risk.*

The titles of the popularised versions tend to use specific nouns, finite verbs that make headlines more readable and easier to understand than the titles of the original Med-RAs titles. Although I agree with the fact that titles in Med-E-Pops are “easified” to be better understood, I also disagree with the supposed emotive charge of Med-E-Pops titles as the following titles from these corpora exemplify:

<i>Med-E-RA22</i>	<i>Med-E-Pop22</i>
(2) Bone Mineral Density in Estrogen-Deficient Young Women.	Study Defines Strategy to Protect Bones in Women, Girls With Primary Ovarian Insufficiency.

Giunchi (2002) states that scientific medical research titles use abstract nouns and propositions and verbless nominalisations to avoid commitment, personal involvement and the indication of a human agent.<sup>35</sup> 3) As Nwogu's (1991) seminal

35 They use different linguistic devices to attract the attention of their audience to a single medical problem, focusing on its impact on their lives by alluding to a possible solution to a medical problem (Bazerman and Paradis 1991). In fact, the need to attract the information-seeker while simplifying the medical “jargon” for laymen arises in headlines where the name of technical procedures such as *endoscopy* is rephrased into *new technique for X*. Although this dissertation does not focus on an in-depth study of Med-E-RAs and Med-E-Pops titles, Appendix 1 aims to exemplify and reflect these

work shows, moves structure in popularizations differ from their RA counterparts. This is also the case with Internet accounts, which aim to narrate a tale that is relevant and designed for patients seeking to be more active in their own cure process. However, section 1.3.2 presents how moves can be identified in Med-E-Pops—this aspect will be explained in depth in Chapter 3. 4) As Giunchi (2002) puts it, WAs mainly report the views of the authors of the research papers they are summarising. In her study the most frequent discourse device she finds are quotations from interviews with authors. These quotations are usually introduced by “value-free” main verbs and the name of the researchers with the characteristic inversion of journalistic discourse reporting direct speech. According to this scholar (2002: 281): “[t]he account develops by expanding on the theme through the use of a narrative device which consists in alternating direct speech with comments that explain the practical outcome of the research”. These direct quotations, typical of narratives, are one of the main devices used by WAs which according to Guinchi aim to increase the level of shared knowledge with their readers and to keep them interested. For this study, reporting is not the main device but one of the most representative realisations of the voice of Med-E-Pops writers.<sup>36</sup> 5) The organisation and density of information between Med-RAs and WAs is also different. WAs have lower average sentence length while Med-RAs have more complex and longer sentences. Myers (1986: 26) explains that in the process of adapting Med-RAs into popularised texts complex sentences are: “[b]roken down into more simple ones”. The differences between these two text types are stark and they show how writers modify and adapt what they write to satisfy the needs of their audience.<sup>37</sup> Also, in research papers, schematic units can be said to follow each other in a logical and sequential manner that follows the conventional format. Writers of WAs do not follow a standard canonical order for presenting their narratives. The continuous pattern dominates the research article, in which the same topic appears in a

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observations. However, since that aspect did not enlighten the study of the concept of voice in Med-E-Pops writers it was left out of the scope of this analysis.

- 36 This dissertation would like to contribute to this observation with a further interpretation of the use of direct speech. To my understanding, the use of direct and indirect quotations brings the voice of the experts to the text, building trust in the produced report and therefore in the research carried out. This proposition will be reviewed and interpreted further under the umbrella term of voice and exemplified in the discussion of results (see Chapter 3).
- 37 Giunchi justifies the complexity of sentences, the completeness and density of the information in scientific texts as a reflection of the authors’ desire to convince their referees, colleagues, and those who control research funds of the value of their work.

sequence of utterances, albeit with different wording, while in the popular version the predominant pattern is a simple one, in which the comment or new information of one utterance becomes the topic of the following one. In Giunchi's words (2002: 282): "The high number of occurrences of the constant topic progression pattern in the scientific papers indicates the tendency of authors of research reports to thematise their research content in the research particularly in the Methods and Results sections".<sup>38</sup> As mentioned above and analysed in Chapter 3, the organisation of Med-E-Pops is interpreted in this dissertation as almost canonical across all the electronic publications under study. 6) In terms of the characteristic elements that define themes across the genres, in the research papers schematic units of text are organised in accordance with the continuous patterns in the progression of topics and tend to make use of one of the following as a theme: complex nominal subjects and combination of a prepositional phrase adjunct and a nominal group subject. In other words, scientific and therefore medical knowledge is usually represented in written RAs through linguistic impersonality. However, WAs display a wide use of personal pronouns—related to the Med-RAs researchers; i.e. *they*—and names of people as a theme. The use of names as a theme in these texts is seen as a reflection of the relationship that WAs share with the journalistic narrative genre, which, like fiction, entails a description of facts, events and participants through cohesive devices or strategies. It is also seen as a strategy aimed at involving the reader in the subject matter of discourse in popular accounts.<sup>39</sup> It is worth mentioning here Giunchi's findings on personal reference and lexical cohesion due to their transferability to Med-E-Pops and its interpretation from the concept of the *writers' voice*. Personal reference is the prevailing form of reference adopted. Items identified refer to: authors of the research article, authors and reformulators, other researchers (citations), treatment of subject-matter and research participants. While Med-RAs

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38 Researchers share most of the medical knowledge and therefore the conventional organization of information in utterances in scientific texts with specialised addressed readers. The high occurrence of the simple linear progression in popular articles depends on the low level of shared knowledge between the author of the scientific research paper and the information seeking paper. Giunchi states that this situation limits writers of Internet accounts in constructing their narrative with a linear progression, to selecting a limited amount of the new information introduced in the research paper.

39 In Giunchi's study (2002) the overall analysis of cohesion reveals that the research article and its Internet account tend to make use of the same types of cohesive devices. That is, each of the genres observed uses reference, conjunction and lexical cohesion. Lexical cohesion items are used extensively, while there is very little evidence of substitution and ellipsis.

tend to make use of the first person plural pronoun *we* and the possessive pronoun *our* to refer to authors, WAs make use of the pronouns *they* and the possessive *their* for the same purpose. In terms of reference to other researchers, Med-RAs could be said to be measured by the quality of the research reported in the text and is almost invariably measured by the quality of the citations it contains, while in WAs the personal reference items are used to refer to the RA researcher to show their agreement and to other researchers to build trust around the research. While in scientific papers the researchers present their own claims to deny, support or update claims made in the works cited, citations in WAs function only to reinforce claims made by researchers.<sup>40</sup> Besides, apart from finding the researchers references as syntactic subjects of actions included in Med-E-Pops, as Chapter 3 will show it is also very common in Med-E-Pops to find abstract rhetors or verbs with inanimate subjects, as the following example from Med-E-Pop3 shows:

*This finding allowed the authors to construct a case-control genetic association study to identify the specific DNA polymorphisms of CCL1 that are associated with the different disease outcomes of TB.*

The most distinctive form of lexical cohesion identified in the genres is naming. Names that contribute to cohesion are of two types: those which refer to authors of scientific papers, and those that refer to other researchers cited. The use of the personal names of scientific writers as a cohesive device is unique to the popular genre. In WAs the prevailing naming convention consists of academic titles and names at first mention and names without titles in subsequent mentions, as Giunchi's (2002: 287) example shows:

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40 According to Giunchi (2002) medical RAs and WAs differ strongly in terms of cohesion by conjunction. Although this view has attracted recent research interest, I have omitted it from this study due to the low occurrence in my Med-E-Pops corpus. However, this dissertation must mention that the main distinction is between the popularised genre on the one hand and the professional genre on the other. While not much can be said about the extent to which the use of conjunction in the professional genre is constrained by the purpose (see Bondi below), audience and medium of discourse, the use of conjunctions in the popularised genre is highly revealing about the effect which these variables have on discourse in the genre. WAs make use of the additive "and", adversative "but" and causative "because" in initial sentence positions. The way the items are used in the web-posted text is characteristic of colloquial narrative and informal spoken discourse rather than written formal discourse: "Because we can see the tumor so clearly through the endoscope, we can easily find the margins of the tumor." Therefore, clarifying propositions is central for the effective communication of information to a less specialised or even lay audience.

*We perceive it as a women’s disease and have totally ignored the fact that a lot of men are affected” said lead study author Dr. Eric Orwoll of the Oregon Health Sciences University in Portland. Reported in this week’s New England Journal of Medicine are the results of study Orwoll and colleagues did using the drug alendornate, marketed as Fosamax.*

This scholar observes that this *naming convection* seems to be part of the informality of the popular genre of WAs and also a strategy for establishing solidarity with the audience. I will argue in Chapter 3 that this strategy is observed and interpreted in the Med-E-Pops corpus not as an engagement convention but as a device used to promote the prestige of the authors of the Med-E-RA and to claim knowledge as the following example aims to illustrate:

<i>Med-E-RA19</i>	<i>Med-E-Pop19</i>
(3)We identified 4,639 patients who underwent Roux-en-Y gastric bypass surgery and a control group of 4,639 obese patients who did not have surgery in a national private insurance claims database in a 5-year period (2002 to 2006).	To test the assumption, researchers <b>led by Brian Matlaga, M.D., assistant professor of urology at the Johns Hopkins University School of Medicine and director of stone diseases and ambulatory care at Hopkins’ James Buchanan Brady Urological Institute</b> , used an insurance claims database to identify 4,639 patients who had undergone Roux-en-Y surgery between 2002 and 2006. The researchers identified a second set of 4,639 patients who had similar characteristics—including age, gender, and body mass indices that indicate obesity—but not the surgery.

As a whole, WAs may seem to be created as human-interest stories. With this practice, medical academic discourse is related to the real world of the reader by providing explanations of concepts upon which research is based—presenting information related to the main findings in the research as an initial segment of the popular discourse, referring to RAs researchers by their personal names, adopting a simple linear topic progression pattern and adopting a casual style in cohesion items (such as the conjunctions *and* and *but*). Giunchi (2002) concludes that the medical correspondents, when writing for a less specialised audience on the web, omit, select and transform Med-RA information to develop a story line, mystify patients seeking reliable information on the web and prevent them from

assessing the reliability of what they find web-posted. She believes that (2002: 288): “[l]ike other forms of popularised science journalism, medical web-posted accounts translate ‘narratives of science’ into ‘narratives of nature’ and this transfer of information may create unjustified expectations that a magic cure is to be found on the Net”. The results obtained from the analysis (see Chapter 3) open a debate regarding Giunchi’s findings and the conclusions drawn from my data interpretation since I interpret the textual evidence found in my corpora from a different angle. Giunchi’s studies may have, for instance, disregarded the potential constraints and implications of the electronic medium and the e-journal or web of publication. I will discuss the fact that thanks to hyperlinks available in Med-E-Pops, potential readers have direct access to the Med-E-RA abstract in order to reach the main source of reliable information: the counterpart and origin of the Med-E-Pop. This fact emphasises the scientific rigour of Med-E-Pops. Furthermore, Med-E-Pops do not create any type of expectation for their audience, which is comprised of specialised and non-specialised readers as shown in the survey-based approach presented in Chapter 2. Therefore the interpretation of this dissertation’s results has led me to conclude that every feature that characterises Med-E-Pops also contributes to the creation of the concept of the *voice* of Med-E-Pops writers—although this voice could be conceptualised as almost negligible in this genre. For the purposes of overall understanding of this multi-levelled approach to the conceptualisation of the concept of *voice*, section 1.4 is entirely devoted to analyse what this dissertation on Med-E-Pops understands as the concept of *voice* of Med-E-Pops writers and how this concept could even be measured.

Finally, this section, supported by this dissertation’s discussion of the results (see Chapter 3), concludes that the Internet should not be seen as a threat to the adaptation and dissemination of medical knowledge to lay people but an opportunity to disseminate medical findings to lay people by means of high-quality and understandable electronic pieces of writing.

## 1.4 CONCEPTUALISING VOICE

Voice is a full-bodied theoretical concept that, as Tardy (2012) claims, has much to offer to the study of written discourse. Elbow (1994) believes that the concept of *voice* not only carries implicit information that may awake among other feelings, identity attitudes or different type of emotions, but it also makes the writer’s voice *unique*. He also stresses the fact that the concept of *voice* in writing is a matter of interpretation. Like Elbow, researchers such as Cherry (1998), Charles (1999),

Tang and John (1999) and Tang (2004) have tried to empirically show how these interpretations could be identified and observed from an expressionist viewpoint. However, voice uniqueness may have no relationship with the writer's real identity.<sup>41</sup>

The field of identity, or self-representation in writing, has received much attention since the 1990s. It mainly began with Ivanič's (1998) *Writing and Identity*. *Identity* is a broad term that has been approached from different inspiring viewpoints.<sup>42</sup> Foucault (1972), for instance, exemplifies how identity is alienated by the dominant discourses of academia or institutions—just like novice writers' first incursions into a research field. Fairclough (1992, 1995) also believes that the identity of any writer may be affected by other dominant *identities*. Therefore, the idea of power and the subsequent relationships embedded in different social, ethnic or literary canons for instance, shape for good or for bad, both discourse and the self-identity of a writer. As a matter of fact, in the early 1990s Ivanič and Roach (1990), Ivanič and Simpson (1992), Ivanič (1994, 1995), Fairclough (1995)—to name just a few—started to question who was who in academic writing. Awareness was raised about the issue of the real *self* and the *artificial imposed identities* adopted in academic writing. Some scholars stated that constructing an identity when writing academic papers was just a performance (Butler 1990).<sup>43</sup> However, Ivanič (1998) observes that some linguistic and textual choices made by writers in their texts—these choices being imposed or even expected by the generic conventions of the texts, should be interpreted as realisations of the writers' self. Furthermore, she argues that

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41 Think for instance of a new writer to the field or junior non-native researcher, who has to publish in academic English. This writer tries to imitate senior voices and remove any trace of personal voice. In other words, the writer tries to show neither an audible voice nor a marked identity that could be detrimental for potential publication.

42 The concept of *identity* has been explored from theoretical and methodological approaches (Schiffrin 2006), from the private and public idea of identity construction (Lakoff 2006, Coulthard 2008), from cultural approaches (Escudero-Álías 2008, Aliaga-Lavrijsen 2013), from gender and sexuality viewpoints (Leppänen 2008), and from new ways of understanding professional settings (Rhodes, Hermine and Iedema 2008) among many others.

43 Meanwhile, a sharper shift was being observed. Scholars such as Coffin *et. al* (2010) claimed that academic writing was becoming less segregated from informal speech. Hybridisation of traditional academic styles and colloquial, informal, spoken styles were now accepted. Personalised writing and space to project identities which academic writers feel comfortable with, were part of this evolution.



these realisations can be classified into four main groups in relation to the function of the writers' self in the written text, as explained below.

### 1.4.1 Ivanič's concept of the writer's identity

Ivanič (1998: 23) proposes four main aspects related to the sociocultural context in which the writer's self can be distinguished when approaching identity: (i) The autobiographical self, (ii) the discursive self, (iii) the self as author and (iv) the possibilities for self-hood in the sociocultural and institutional contexts.

(i) *The autobiographical self*. The first aspect, the autobiographical self, refers to the sense of uniqueness that each person has as an individual. Clark and Ivanič (1997) point out that, when writing, the writer is influenced by his or her life history up to the moment of writing. Ivanič (1998: 24) also acknowledges that this autobiographical aspect is “[s]ocially constructed and constantly changing as a consequence of their developing life-history”. From the Expressivist School, Elbow (1995) also acknowledges this idea of an autobiographical self as the sense of being who you are when writing for academic purposes, and the eternal dichotomy of being a writer or an academic arises. This sense of one's own identity has recently been approached in newly published papers such as Hyland's 2010b, 2011 and 2012. Hyland has conducted research on how identities are constructed and expressed through the use of language in different academic disciplines across academic genres. He states that individuals draw on linguistic resources to both achieve and maintain disciplinary membership.

(ii) *The discursive self*. The discursive self is an identity that writers construct according to the characteristics of the context they are in. Discourse conventions shape the way writers construct their identity in the text. Cherry (1998) proposes the use of the term *self-representation* to refer to the way writers want to sound or appear in their texts.

(iii) *The self as author*. The third aspect Ivanič distinguishes is self as an author.<sup>44</sup> She defines the self of an author as a strengthening of the authorial voice.

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44 This aspect could sometimes be confused with the discursive self. Hyland (2002) points out that some writers, novice scholars for instance, run the risk of not establishing an effective authorial identity if they do not express their “voice”. Stapleton (2002: 3) —reviewing Shen (1989) and Li (1996)—states that for novice writers or L2 writers to have an individual identity is something almost impossible to achieve.

Bartholomae (1995) refers to this aspect as the *power of authorship*. Writers then occupy a position of authority; they hold and display a firm opinion or have an attitude.

(iv) *The possibilities for self-hood in the sociocultural and institutional contexts.* The last aspect that Ivanič proposes when referring to writer identity deals with the possibilities for self-hood and institutional contexts. In this aspect, the idea of self-hood is imposed onto the context of situation, in this case the institutional context of publication. Novice scholars for instance, may have a tentative approach to self-identity in their first papers. These writers may not have enough confidence and seniority to make certain claims, unlike senior researchers.

Table 2 shows Ivanič's main tenets on identity and some research questions that may arise directly from them and which are relevant for this study.

<i>Ivanič's (1998) proposal related to the sociocultural aspects of identity</i>	<i>Research questions derived from these tenets and which are relevant for this dissertation</i>
The autobiographical self	The autobiographical experience of the writer <i>Do Med-E-Pops writers reflect any recognisable feature of their autobiographical self in their texts?</i>
The discoursal self	The writer's self-representation is based on textual conventions. <i>Is the identity or self-representation of Med-E-Pop writers shaped by textual or generic conventions?</i>
The self as author	The writer projects a strong authorial voice <i>Do Med-E-Pop writers convey a powerful authorial identity in Med-E-Pops?</i>
The possibilities for self-hood in the sociocultural and institutional contexts	The context of publication assigns the writer a role and therefore an identity <i>Is the Med-E-Pop writer's identity constrained by the channel and medium of publication?</i>

Table 2. *Summary of Ivanič's ideas when dealing with identity from a sociological viewpoint and subsequent research questions related to this thesis.*

These four aspects studied by Ivanič are of paramount importance for this dissertation since they help explain the results found in the data analysis (see Chapter 3). Moreover, as shown in table 2, her findings inspire highly relevant

research questions for this piece of research. In this dissertation, Med-E-Pops writers make no reference to the uniqueness of their individuality, introducing various aspects related to their life history in their Med-E-Pops. However, their identity is not only constrained by discourse conventions and social expectations of the Med-E-Pop genre but also by the presupposed authorial identity projected by the writers in the interpretable realisations of their voice. The writers' identity is finally perceived, negotiated and interpreted by a potential readership while reading the writers' texts. To allow readers to reach such interpretations, writers use certain linguistic and textual features to show the potential audience their proximity, attitude or even commitment regarding what is conveyed in the text. To explore writers' identity, applied linguists have studied a variety of linguistic realisations and textual features of written texts. Below I describe some studies that have defined and described identity linguistically.

#### **1.4.1.1 *Linguistic and textual features associated with writer's identity***

It should be noticed here that linguistic research related to the exploration of identity has mainly focused on the study of *self-mentions*. According to Hyland (2005) the presence or absence of explicit author reference is a conscious choice, which models authorial identity. When researchers wish to mark their identity and project their voice onto their texts, they use self-mentions, which refer to the degree of explicit authorial presence in the text measured by the frequency of use of first-person pronouns and possessive adjectives—*I, me, mine, exclusive we, our, ours*<sup>45</sup> (*c.f.* Ivanič 1998; Vassileva 1998; Kuo 1999; Tang and John 1999; Hyland 2001, 2002a,b; Fløttum 2003a, 2003b; Harwood 2005; Martínez 2005; Lorés-Sanz and Murillo-Ornat 2007; Lorés-Sanz 2008; Carciu 2009; Pérez-Llantada 2009; John 2009a, etc.). However, research in the field of linguistic features associated with identity other than first person pronouns—singular or plural—is limited (*c.f.* Charles 1999, 2004; Ivanič and Camps 2001 or Breivega *et al.* 2002, John 2005, 2007, 2009b). In the following table 3, I mention some of the insightful studies which analyse how the writer's identity is construed through linguistic and textual features other than first person pronouns.

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45 Hyland's (2005) research on self-mentions and on the broader concept of Metadiscourse will be further explained in Chapter 2 when describing the analysis of the linguistic data.

<i>Authors</i>	<i>Studies on linguistic and textual features of identity in written texts</i>
Hugh Gosden (1993)	<ul style="list-style-type: none"> <li>• Subject of the clause and its discourse functions in scientific research articles.</li> </ul>
Roz Ivanič (1998)	<ul style="list-style-type: none"> <li>• Clause structure-lexical density, verbs, nouns and nominalisations, tense, mood and modality and lexis.</li> </ul>
Roz Ivanič and David Camps (2001)	<ul style="list-style-type: none"> <li>• Types of voices or positioning: Halliday's ideational positioning, interpersonal positioning and textual positioning. Timing (timescale) as a central variable to processes of constructing meaning.</li> </ul>
Amy Burgess and Roz Ivanič (2010)	<ul style="list-style-type: none"> <li>• Ethnographic study and a textual, visual and audio data sample analysis using software.</li> </ul>
Ken Hyland (1999)	<ul style="list-style-type: none"> <li>• Hedges, emphatic markers, attitude markers, relational markers and person markers.</li> </ul>
Ken Hyland (2004, 2005a, 2005b)	<ul style="list-style-type: none"> <li>• Stance (presence): Hedges, boosters, attitude markers and self-mentions.</li> </ul>
Ken Hyland (2010b)	<ul style="list-style-type: none"> <li>• Comparison of words, phrases or usages between John Swales and Deborah Cameron RAs together with expression of the self.</li> </ul>
Ken Hyland (2011)	<ul style="list-style-type: none"> <li>• Identity claims in thesis acknowledgements, doctoral prize applications and bio statements.</li> </ul>
Ken Hyland (2012)	<ul style="list-style-type: none"> <li>• How identity is projected in professional settings.</li> </ul>
Maggie Charles(1999) Maggie Charles(2004)	<ul style="list-style-type: none"> <li>• Linguistic features related to the presence of the author in the text.</li> <li>• Verbs, adverbs and adjectives.</li> </ul>
Kjersti R. Breivega <i>et al.</i> (2002)	<ul style="list-style-type: none"> <li>• First person pronouns, metatextual comments, explicit and implicit references and lexical items.</li> </ul>
Lisa Wise (2003)	<ul style="list-style-type: none"> <li>• Students' identity claims in web-logs.</li> </ul>
Daniel Dickey (2004)	<ul style="list-style-type: none"> <li>• The impact of innovative teaching tools in students' identity.</li> </ul>
Ramona Tang (2004)	<ul style="list-style-type: none"> <li>• Linguistic expressions of negotiability, authority and solidarity.</li> </ul>
Mutsumi Yamamoto (2006)	<ul style="list-style-type: none"> <li>• Grammatical machinery in Japanese and English when projecting agency and impersonality.</li> </ul>
Suganthi John (2005, 2007, 2009a, 2009b)	<ul style="list-style-type: none"> <li>• Phrases or sentences with an organising function, citation sequences, moves, process types, voice and agency.</li> </ul>

Table 3. *Studies focused on linguistic and textual features which contribute to the construction of authorial identity.*

Some of these pieces of research have used several theoretical or methodological frameworks in order to explore how identity is constructed and projected in a

text. For instance John (2005), who carried out research on how the identity of MA students is constructed under a revision process, acknowledges having turned to organisation theories (see Vande Kopple 1988 for instance), genre analysis (Hopkins and Dudley-Evans 1988; Swales 1990; Samraj 2002, 2004, 2005; Hyland 2002d among others), evaluation (e.g. Hunston and Thompson 2000; White 2003 or Sinclair 2004), transitivity (Halliday 1994; Thompson 2004, and many more) and interaction (Thompson and Thetela 1995; Hoey 2001). Other studies such as Gosden (1993), Charles (1999) and Martínez (2001) use a single approach: rhetorical attenuation or Halliday's systemic-functional grammar.

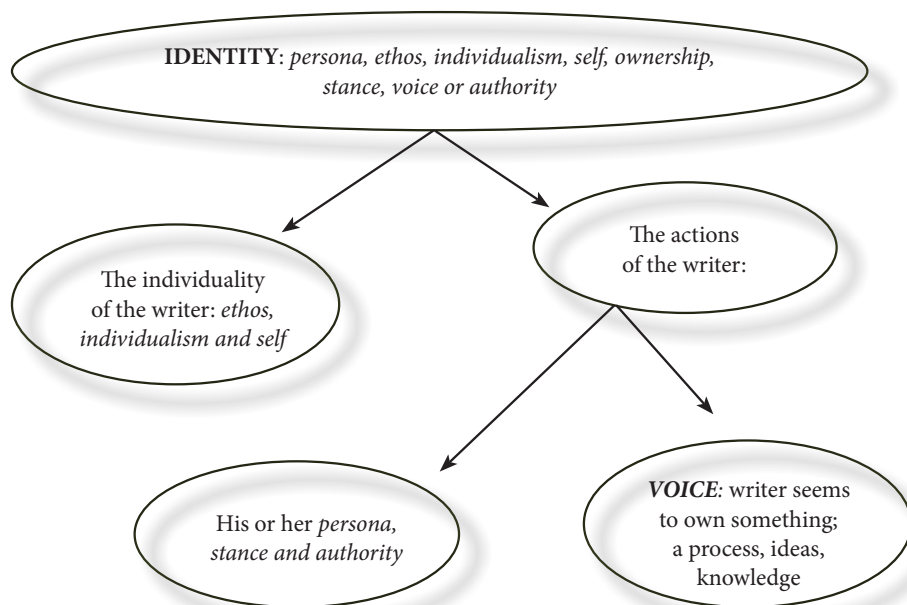
With regard to this dissertation, the value of a summary such as the one presented above of the writer's identity—and of the linguistic and textual features associated with it—is that it helps to justify and also clarify what this study aims to observe regarding the broad scenario of self-representation in writing. However, the results found in the data analysis demand further definition and interpretation since the aspects studied by Ivanič regarding writers' identity seem to be too broad to help us interpret the evidence found in these corpora. Therefore, the following section turns from an expressionist view of identity to social constructivist studies of the concept of *self* in written texts in an attempt to conceptualise the more specific aspect of writers' identity that this dissertation aims to observe, that is, the voice of the Med-E-Pops writer.

### **1.4.1.2 *Towards a conceptualisation of voice of the Med-E-Pop writer***

Although it is out of the scope of this study to interpret the identity of Med-E-Pops writers, I agree with Ivanič (1998: 12) that an individual's identity is the result of "an affiliation to particular beliefs and possibilities which are available to them in their social context". Hyland (2011) studies how identity is constructed, and therefore projected, in some reflective genres such as thesis acknowledgements, doctoral prize applications and bio statements. In his study he adopts a social perspective when claiming, "we are who we are". Hyland therefore conceives the self-representation of a writer as a collective characterisation. We identify with our community and therefore with a target discourse, practise or behaviour. Therefore, in order to display our work as credible and valid, Hyland thinks that when writing in academia "we negotiate a self which is coherent and meaningful to both the individual and the group" (2011: 9). Moreover, Cherry (1998: 269) states that the self-representation

of a writer is embedded with representations of “audience, subject matter and other elements of context”. This social constructivist view of the writer’s representation is the one adopted in this dissertation. The rationale is that Med-E-Pops writers seem to self-represent themselves in their texts, being constantly aware of how to specify their presence and how (not) to show the visibility of their presence while fulfilling the generic conventions and the discourse community expectations. That is, the representation and therefore projection of Med-E-Pops writers’ identity is unavoidable influenced by the sociocultural context in which writers create Med-E-Pops. These Med-E-Pops are also shaped by taking into account the context of the readers who receive these popular texts. Therefore, the resulting data obtained from this analysis need further specification, since the concept of *self* revised so far seems to be too broad to account for an accurate interpretation of the concept of *voice* in Med-E-Pops. To narrow the theoretical conceptualisation of the identity of a Med-E-Pops writer I now turn to John (2005) and her study of the concept of *self*. It is her thesis about the concept of *writers’ voice* that casts light on the interpretation of my findings.

According to John (2005), the concept of *self* is the first detail that comes to readers’ minds when we notice any trace of writers’ identity projection in a written text. When dealing with the concept of *writers’ identity*, John (2005) observes that the following terms: *persona*, *ethos*, *individualism*, *self*, *ownership*, *stance*, *voice* or *authority* are associated with the concept of *identity*. These terms refer to different aspects of the writers’ self-representation or identity. However, she distinguishes distinctive differences between these terms and the realities they refer to. John classifies these terms into two groups according to whether these terms refer to either the writers’ individuality or to the actions writers seem to carry out in their texts. Therefore, *ethos*, *individualism* and *self* refer to the individuality of the writers, whereas *stance*, *persona*, *authority* and *voice* are related to the actions of the writers—what they say, they think, evaluate, do, etc. This second group can be divided into two sub-groups since some writers’ actions project their attitude and positioning towards what is being written in the text, whereas other actions of the self simply project their presence in the text with no further communicative intention. The first subgroup is composed of the concepts of *persona*, *stance* or *authority*, and the second one comprises the writers’ voice. When writers display their mental processes, ideas and knowledge in their texts, they admit to having and projecting their voice in these written texts. For the purposes of clarity, graph 1 illustrates John’s (2005) theoretical conceptualisation of voice introduced above:



Graph 1. Graph based on John's (2005) concept of writers' identity.

The results obtained from the contrastive data analysis carried out in this dissertation (see Chapter 3) and the perception of the Med-E-Pops writers' identity can only be understood through the concept of *voice*. At the beginning of this section 1.4, some research questions arising from the sociocultural aspects of identity have been highlighted as relevant for this dissertation. These questions are: *Do Med-E-Pops writers reflect any recognisable feature of their autobiographical self in their texts? Is the identity or self-representation of Med-E-Pop writers shaped by textual or generic conventions? Do Med-E-Pop writers convey their authorial identity in Med-E-Pops? and is the identity of Med-E-Pop writers constrained by the channel and medium of publication?* These research questions also led this piece of research towards the observation of the concept of *voice* in an attempt to explore the depersonalization of the writer in Med-E-Pops. This writer's voice, however, seems to be imperceptible in Med-E-Pops. Nonetheless, as it might be thought, there is still a voice, because voice is inevitable in a written text (Burgess and Ivanič 2010). Therefore, this study aims to observe to what extent the voice of Med-E-Pops writers is latent or visible by analysing different recurring lexicogrammatical choices in the Med-E-Pops corpus under observation.

One of the main problems with the theoretical concept of voice in applied linguistics is that voice has been conceived and approached as an amalgamative concept (Matsuda 2001). The existing diversity on how to approach voice has led to a certain discrepancy in the academic conceptualisation of this concept in the field of linguistics. Therefore, the following section aims to clarify what I understand by the voice of the Med-E-Pops writer, revising the debate posed around this concept in applied linguistics. This revision also attempts to show how my findings may contribute to the concept of *voice* in Med-E-Pops writers.

### **1.4.2 Discrepancy between academic conceptualisations of voice in applied linguistics**

I agree with Tardy (2012) that it is not easy to define the concept of *voice*. These last decades, scholars have found a discrepancy in the broad range of meanings ascribed to this concept—as explained below in section 1.4.2.2—. Metaphorical interpretations are varied and, as Tardy (2012) observes, it has been controversial to delimit the extension of these multiple interpretations of voice. To carry out a deeper observation of the concept of *voice*, and above all, to explore and interpret the depersonalisation of the Med-E-Pops writers' voice, I first revise two issues which I consider to be at the core of the theoretical conceptualisation of the concept of *voice* explored in this PhD. The first one—elaborated on in section 1.4.2.1—is the distinction between two related and sometimes confusing concepts: stance and voice. It is essential to distinguish between them since they are becoming central to the study of writers' identity in applied linguistics today. This section also aims to show that the data collected should be interpreted based on the concept of *voice*, and not *stance*, contrary to what some readers may expect from the potential informality of the Internet as the Med-E-Pops' medium of publication and dissemination (see sections 1.1, 1.2 and 1.3). The second issue—elaborated on in section 1.4.2.2—refers to the varied academic conceptualisations of the concept of *voice* in applied linguistics. Dealing with these two issues has a two-fold objective. The first one is to review the debate opened about the concept of *voice* in applied linguistics in an attempt to clarify what this dissertation understands by voice. The second aims to frame this research within the theoretical conceptualisation of voice and contribute to the study of the concept of *voice* based on the interpretation of the impersonal representation of Med-E-Pops writers in their own texts.



### 1.4.2.1 *The need to distinguish between stance and voice*

As mentioned in the previous section (see section 1.4.1.2), this dissertation sees the concept of *voice* as derived from an expressionist and social constructivist perspective. Therefore, I understand the voice of Med-E-Pops writers as a writers' manifestation that unveils their presence in the text. Authors then make themselves present and visible in the Med-E-Pop by acknowledging they own the ideas, processes or knowledge portrayed in the written text. The writers' presence is accomplished by several lexico-grammatical choices that allow the audience to interpret their presence as more or less visible. There has lately been a tendency to indistinctly analyse the presence and visibility of writers based on the concepts of stance and voice. However, the data collected in this analysis shows that it is the concept of *voice*, and not *stance* as I explain in this section, which is useful for my research purposes. However, a theoretical review is introduced here to clarify and distinguish between these two concepts that are sometimes confusing in pieces of research based on writers' identity.

Both concepts, stance and voice, essentially refer to the expression of a point of view in speech and writing and to the ways we engage with others. However, although both these concepts have received different treatments in recent studies, voice has remained the most polysemous as I will later show in section 1.4.2.2. It is becoming increasingly difficult to ignore the distinction between voice and stance mainly due to teaching needs and to scholars' needs when disseminating their knowledge in academia.<sup>46</sup> The knowledge of rules regarding voicing or devoicing written texts may help writers to predict the effects on the reader. Linguists conceptualise and apply stance and voice from various angles. There are studies focused on corpora and drawn on metadiscourse theory (Hyland 2000; Lorés-Sanz 2009, 2011a, 2011b; Bondi 2012b), reader response (Matsuda and Tardy 2007; Tardy 2012) or systemic functional linguistics (Hood 2012; Tse 2012), among others. These studies assume that stance is subsumed into the broader phenomenon of voice.

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46 Increasingly, studies in applied linguistics—see Hyland and Sancho (2012)—are based on students' instantiations of voice and stance. In a similar research line, Petrić (2010) states that the students she worked with aimed to show their individual imprint, uniqueness and authority. Students acknowledged that their voice should be represented in their written texts by lexico-grammatical choices that may be socially constrained.

Stance has generally been understood as a concept related to engagement. In Hyland's (1998: 20) words, stance should be related to "[the way writers] deploy community-sensitive linguistic resources to represent themselves, their position and their readers". Over the last few years, scholars have used different terms to refer to stance. While Biber and Fineagan (1989), Biber (2006) or Jaffe (2009) use the term *stance*, Hunston and Thompson (2000) use *evaluation*, and Goffman (1981) preferred the term *footing*, Hyland (1998) used the term *hedging* and Martin and White (2005) included stance under the umbrella concept of *appraisal*. Biber and Gray (2012) argue that stance is a continuum of evaluative meaning, which varies along two axes: one epistemic and interpersonal and the other linguistic. Therefore, stance has generally been approached in written texts through the observation of self-mentions, boosters, hedges and adverbial markers of attitude.

The concept of *voice* started to emerge from these previously mentioned studies. However, the somewhat sneaky concept of voice attracted interest in the humanities as a social construct thanks to Bakhtin's (1981) and Kristeva's (1986) studies. It was more commonly associated with the expressionist idea of authorial visibility. Elbow (1994) referred to voice as *personal stamp*, Martin and White (2005) used the term *signature* and Coulthard (2008) preferred the term *idiolect*. Voice, according to Hyland and Sancho (2012) has been generally conceived as a key marker of individuality and ideological expression of Western cultural hegemony. However, the voice of Med-E-Pops writers just shows their presence in the text using linguistic resources that hardly represent themselves, their position or their readers. I have observed in the data analysis that it is voice, and not stance, that is the concept required to interpret the depersonalisation of informality in Med-E-Pops genre—since Med-E-Pops writers project their voices portraying no stance features at all. The lack of self-mentions, boosters, hedges or adverbial markers of attitude in the Med-E-Pops corpus under study indicates that there is no writers' positioning in Med-E-Pops. This is the main reason to argue that voice, and not stance, is the appropriate concept to interpret the depersonalisation of Med-E-Pops writers. Voice then, has sometimes been perceived as an *impression*, which must be ultimately ascertained by readers and their decoding abilities. Therefore, I see a need to categorise measurable common linguistic realisations to identify voice(s) in a text, grade their visibility and infer further implications about the Med-E-Pops genre (see Chapter 3). The study of writers' lexico-grammatical choices should support the empirical dimension of any piece of textual research on the concept of *voice*—as studies on voice such as Matsuda and Tardy's (2007) and Stapleton and Helms-Park's (2008) have

shown. What is more, scholars such as Hewings (2012) or Silver (2012) see voice embodied in discipline, genre and discourse-bound roles undertaken by the writer, as is the case in the Med-E-Pops genre explored in this collection of texts.

Therefore, the concept of *voice*, and not *stance*, is explored in this dissertation to study the degree of Med-E-Pops writers' visibility, not only realised as mere textual features but as a summative process of choices that causes a specific effect on the reader. In general, I agree with Matsuda (2001: 41), that to investigate how a socially oriented concept of voice is defined, we should approach this phenomenon as "the amalgamative effect of the use of discursive and non-discursive features that language users choose, deliberately or otherwise, to form socially available yet ever-changing repertoires". To conceptualise the concept of *voice* in the recently emerged Med-E-Pops, recent approaches to the issue of voice will now be reviewed.

### **1.4.2.2 Recent approaches to voice**

As mentioned above, the polysemous concept of voice has above all contributed to theoretical disputes over its role in academic writing classrooms (e.g. Elbow 1999; Ramanathan and Atkinson 1999; Stapleton 2002; Helms-Park and Stapleton 2003; Tang 2004; Matsuda and Tardy 2007; Stapleton and Helms-Park 2008, etc.).

The use of the term *voice* in applied linguistics emerged in the late 1960s. Bowden (1995) explains how this metaphor of spoken voice was a concept used by several scholars and was therefore transformed from an auditory phenomenon (Welty 1984)<sup>47</sup>, to an auditory imagination phenomenon (Larson 1982),<sup>48</sup> into a voice that could be heard by readers while reading a text (Elbow 1994). To date there has been little agreement on what should be understood, interpreted and measured by the concept of the *writers' voice*. Tardy (2012) casts light on the conceptualisation of voice by reviewing previous disputes and ambiguities about the study of the auditory phenomenon of voice in academic writing and outlining three aspects of voice observed by Prior (2001): individual aspects, social aspects and voice as a dialogic.

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47 Conceptualising voice as the product of the combination of pulmonary-controlled stream of air, the tension of the vocal cords and the modulation and articulation of voice in the voice box.

48 What the recipient feels, imagines and infers from what is being said.

Although these approaches are open to debate, most scholars agree that the concept of *voice* comprises both individual and social dimensions. Also, certain dimensions may overlap at different times. I refer below to Prior's (2001) three-fold distinction of the dimensions of the concept of *voice* to clarify this dissertation's approach to the concept of *voice* in Med-E-Pops. It is Prior (2001) who identifies two poles in the debate on voice—personal and social. Afterwards, he develops a dialogic, socio-historical theory of the concept. He (2001: 79) argues that his theory offers: “[r]esources for getting beyond the binary of the personal and the social, for taking a complex view of agency as distributed across persons, practices, artefacts, and cultural activity systems”. Petrić (2010) identifies an *individualised voice* resulting from the *writer's choices*, and voice as a result of *the writer's interactions* with others. Matsuda (2011) identifies definitions of voice as falling on an *epistemological continuum*, including *personal* perspectives at one end, *social constructivist* perspectives in the middle, and *social constructionist* perspectives at the other end.

a) *Individual aspects of voice*

Ramanathan and Atkinson (1999) conceive the concept of *voice* in written discourse as unique and personal. They define its nature as what “[i]ndividuates a writer from all other writers, as evidenced in that writer's texts” (1999: 49). Like Elbow (1994, 2007), Tang (2004) also establishes a close connection between metaphorical (written) voice and literal human voice. Elbow (1994) notes that we articulate our human voices as recognisable and unique. Therefore, according to Elbow (1994) we modulate our voices in different contexts, for different purposes and also considering the people we are speaking to; writers should develop their written voice as unique and stylistically recognisable. He acknowledges (2007) that the textual features he associates with voice could also be described as “matters of style” (2007: 177). The concept of *uniqueness* as a sense of individual imprint has been argued (Hashimoto 1987) and has also been supported (Bowden 1995) by mirroring the use of voice as an individual stamp. Elbow (2007) identifies two kinds of voice potentially linked to the writer as an individual: sincerity and resonance. Sincerity can be described as “one style or voice used on some occasions” while resonance is seen as “places where the writer has gotten a bit of the unconscious self” (2007: 179). However, he also points out (1994:xxxi) that this recognisable and unique voice may have no relationship with the real identity of the writer. Jeffery (2010) and Petrić (2010) directly address their survey-based studies to teachers' and students' perceptions of the concept of *voice*. Both studies conclude that writers associate the concept of *voice* with the senses of *ownership*,

*authorship* or *opinion*. To my understanding, these feelings or sensations should be empirically measured, as has been previously mentioned. However, Stapleton and Helms-Park (2008) argue that one of the most difficult aspects of measuring voice is to gauge how this voice is perceived.<sup>49</sup> These individual aspects of voice contribute to the conception of writers and their self-representation (Ivanič and Camps 2001). Although this self-representation is created individually, it is socially ascribed, related and later interpreted in a social context. Both the individual and the social aspects of the concept of *voice* may overlap. However, both aspects—individual and social—refer to different aspects of the writer and therefore they should be explained and observed separately.

b) *Social aspects of voice*

Tardy's (2012) conceptualisation of social voice is embedded in the discipline or social groups to which the writing and writer are linked, whereas the individual voice is basically conceptualised as a property of the writer. This social conceptualisation of voice highlights the fact that the voice of a text is created within a social context. As Tardy (2012: 37-38) puts it "[t]he social voices of that context are part of the writer's repertoire from which he or she may draw when selecting words, phrases, grammatical structures, organisation patterns, even visuals to incorporate within a text".

The relationship between social context and voice is very close since writers position themselves in relation to the text they draw upon.<sup>50</sup> According to Tardy (2012), writers can choose certain discourses to align (or not) their voice within a particular work or text. In her own words: "The choices writers

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49 Helms-Park and Stapleton (2003), Matsuda and Tardy (2007), Stapleton and Helms-Park (2008) and Matsuda and Tardy (2008) exemplify the current open debate about not only the conceptualisation but also the relevance (teaching and learning) of voice in academic English.

50 Ivanič's (1998) view on the discursive self and the possibilities for selfhood emphasises the social and multiple nature of identity and the related social aspects of voice. Ivanič (1998: 25) describes the discursive self as the "[i]mpression which [writers] consciously or unconsciously convey of themselves in a particular written text". This aspect of identity is perceived as social because it is constructed "[t]hrough the discourse characteristics of a text, which relate to values, beliefs and power relations in the social context in which they were written" (1998: 25). Meanwhile, Ivanič's (1998: 27) concept of selfhood deals with "prototypical possibilities [...], which are available to writers in the social context of writing".

make in self-representation (or voice) are socially conditioned, or at least influenced by social context” (2012: 40). For instance, writers within a discourse community use singular and plural pronouns as a form of self-representation (Charles 1999; Hyland 2002a,b; Fløttum 2003a; Lorés–Sanz and Murillo-Ornat 2007; Mur-Dueñas 2007b; Edwards 2009; Molino 2010; Herrando 2010, to name a few). These studies, among many others, propose that the writer’s voice in a text essentially depends on the audience that the text is addressed to. Tardy (2012) also notes that we can find different writers’ voices in the same text. This would exemplify the concept of *heteroglossia* which, according to Bakhtin (1981), emphasises the multi-voicedness of language. He states (1981: 289) that “[l]anguage is not a neutral medium that passes freely and easily into the private property of the speaker’s intentions; it is populated—overpopulated—with the intentions of others”. In other words, the writer’s voice is constrained by external factors such as a given genre—since a genre itself is the result of external, cultural and pragmatic factors. As a whole, heteroglossia helps us to understand how the voice of a writer could be conceived as a fusing of different voices, although as Tardy (2012: 39) points out, “the ways in which voices are put into conversation may be attributed to choices an individual author has made”.

Generally, the social perspective of voice relates to both self-representation and authorial presence as well as the social restraints of the text production setting. Moreover, a social view of voice also suggests, as Burgess and Ivanič (2010) do, that voice is inevitable. Even though writers attempt to self-represent themselves as invisible, there is still an audible and therefore interpretable voice, since voice is not simply owned by writers, but constructed by the social world the writers inhabit.

### c) *Voice as a dialogic construct*

Ivanič’s (1998) theoretical framework for the writer’s identity highlights not only the personal and social aspects of identity but also the combination of both. The text writer or the social background of the text in isolation cannot, on their own, give shape to the voice projected in the text. Following Prior (2001), voice should be understood as an interaction between the individual, the social and the resulting co-construction of voice. In this interactive or dialogic perspective, issues such as power or interpersonal relationships gain importance in order to play a leading role in the writer’s discursive repertoire. Therefore, the construction of voice may differ in different times and spaces of writing. Seeing voice as dialogic requires us to look not only into the roles of the writer and the

social context in voice construction but also into the readers' role, since it is the reader who identifies and therefore interprets the writer's voice. As Elbow (1999: 336) puts it: "voice in a piece of writing is always a matter of interpretation".

In this empirical study I have focused on the text (Med-E-Pops and Med-E-RAs) to build an understanding of what is conceived as an individual voice, and I have also approached the social aspects of voice by observing the social and contextual constraints of the text production. To build an understanding of voice in Med-E-Pops I have also attempted to approach a dialogic view of voice—drifting towards the perspective of some of the potential readers, medical personnel, as shown in Chapter 2. This survey, which is mainly intended to reinforce the genre and corpus research methodology, shows that the voice this readership identifies and later interprets makes them trust the text. In other words, the dialogue established between the individual aspects of the voice of Med-E-Pops writers and the social and contextual constraints imposed by the reporting mediation or knowledge dissemination context—health section of e-journals and webs designed for medical personnel for keeping up-to-date—may lead the reader's interpretation towards the fact that the Med-E-Pops writer does not interfere in the reporting process.

The resulting interaction between the individual, the social and the resulting construction of voice shows that the interpersonal relationships of dialogue that the Med-E-Pops writer aims to establish with the reader is subordinated to the purpose of the Med-E-Pops genre, that is to inform the reader about the Med-E-RAs findings in a neutral and objective way, depicting their own presence from the texts they write. Needless to say, the resulting interpretation of the writer's voice builds trust not only based on an objective and neutral knowledge dissemination process but also based on the scientific rigour of the research displayed in the Med-E-RAs. It is also true that different audiences may construct the voice of a text writer in distinct ways. However, the use of some lexico-grammatical features makes the reader identify and interpret the voice of the Med-E-Pops writer as dormant. Therefore, Chapter 3 discusses how some linguistic choices made by Med-E-Pops writers can be observed, classified and interpreted as an attempt to mask their own voices. These writers consciously avoid projecting their voice in an attempt to bring the research authors' voices to the fore in Med-E-Pops (further interpretations are included in both Chapters 3 and 4). The observation of these linguistic features may provide some empirical, applicable and meaningful generalisations for the interpretation of writers' voice in Med-E-Pops. Therefore, the following section reviews previous studies on

linguistic features associated with the self-representation of the writer that have been interpreted as expressions of voice of the writer in this dissertation. In order to construct a theoretical framework and data-analysis taxonomy (included in Chapter 2) for the later observation of the Med-E-Pops writers' voice (included in Chapter 3) different studies on the depersonalisation of the writer are reviewed below.

### **1.4.2.3 *Linguistic features associated with the expression of voice of Med-E-Pops writers***

In the last two decades, there have been various studies within the fields of rhetorics and pragmatics (Salager-Meyers 1994, 1998; Connor 1996, 2003; Luzón-Marco 1998; Lafuente-Millán 2008, 2010) and under a transitivity approach to SFG (Martínez 2001; Blanco-Gómez 2002; Marín-Arrese 2002; Pérez de Ayala 2002) that have focused their analysis on the interpretation of the linguistic realisation of the writer's presence in specialised written texts. That is, like many others, these researchers have observed from different methodological perspectives that there is a range of linguistic conventions that are aimed at portraying the writers' intervention in their own texts, for instance, the writers' commitment or detachment from what is expressed in their texts. Since Med-E-Pops are the resulting products of Med-RAs adaptations, and they therefore mirror their counterparts, I have turned to some studies on the writers' positioning or proximity in RAs to illustrate that some linguistic features or rhetorical conventions can also be associated with the presence of the writers in their texts. Therefore, these realisations can also be applied to the study of the concept of *voice* in Med-E-Pops. Apart from justifying this conceptual association that inspires this study, this section also aims to introduce, to a certain extent, the linguistic features associated with the expression of voice of Med-E-Pops writers. These features will be explored in depth in the data analysis section of Chapter 2 when dealing with the methodology used in this contrastive analysis.

The presence of the text writers has been observed from many angles in applied linguistics. One of the most common angles is the phenomenon of attenuation. Following Thomas (1995), the rhetorical attenuation phenomenon could be defined as strategies or elements that help the approximation of author and reader through the use of a certain politeness or of other specific discourse conventions. The main purpose of this phenomenon is to allow text authors to be present and visible in their piece of writing in a more or less objective way



while presenting their research findings. Pérez-Llantada (2003: 30) defines this phenomenon as follows:

The pragmatics of discourse makes necessary the author's acceptance of limitations, thus showing humility, sincerity in the piece of writing [...] Together with the use of persuasive style, technical discourse also complies with the pragmatic criterion of appropriateness, in the sense of adaptability—or rather formality—of style to the audience addressed. One of the most systematic features for showing politeness in academic writing are the well-known “hedges” or “hedging devices” (Kress and Hodge, 1979; Salager Meyer, 1994).

This attempted politeness by RAs writers has usually been studied from pragmatic, semantic and discourse perspectives.<sup>51</sup> The attenuation phenomenon comprises a sociopragmatic angle that allows authors to portray both author uncertainty and their authorship. In other words, this linguistic phenomenon—studied by many other researchers such as Zadeh (1965), Weinreich (1966), Lakoff (1972) or Clemen (1997), portrays the commitment and stance of writers towards what is conveyed in their texts. Among other aspects, Hyland (1996a) suggests that by using rhetorical strategies RAs authors can for instance present research findings in a cautious way or can also encourage research dialogue between the members of their discourse community. For Salager-Meyer (1994, 2003) rhetorical strategies

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51 Zadeh (1972), inspired by Lakoff (1972), bases his semantic perspective on the analysis of simple semantic units (i.e. *much* or *essentially*) and more complex semantic units (*technically* or *slightly*). From a pragmatic perspective, Fraser (1975) and Brown and Levinson (1978) study the potential relationship of modal verbs as mitigating elements. From a sociocultural view Calsamiglia (1996) refers to this pragmatic perspective as follows:

Focusing on the interaction between speaker and hearer, the *presentation of the self* and *face management* in the social scene (Goffman 1959, 1967, 1971) provides the background to understand the *politeness principles* (Leech 1983, Brown and Levinson 1987). Interaction is regulated by the *co-operative principle* which governs conversational maxims (Grice 1975), and the positive and the *negative face* of the interactants, that is to say, preserving one's positive image and securing one's space of action. (1996: 64)

From a discursive perspective, this politeness or rhetorical phenomenon has been defined by Biber (1988) as several informal linguistic realisations that somehow express a grade of certainty of the author (1988: 240): “Hedges are informal, less specific markers of probability or uncertainty. Downtoners give some indication of the degree of uncertainty; hedges simply mark a proposition as uncertain”. Swales (1990) defines hedges as a rhetorical strategy to preserve authors' honesty and to help them to become integrated into their discourse community.

have to convey fuzziness, authors' modesty as regards their achievements and personal involvement and thirdly the impossibility or non-willingness of reaching an absolute accuracy related to the scientific issue, looking for a balance between rhetoric, conviction, caution and probability. Above all, Myers (1989a) reminds researchers that it is essential to fulfil genre conventions in order to get research published. That is, to publish their research, authors have to be "humble servants of the discipline". Therefore, if some linguistic features can for instance be interpreted as writers' attitude markers towards what is said in RAs, that means that these features implicitly indicate the writers' presence associated with them. In other words, if the writers were not present in their texts, they could hardly manifest their attitude, positioning or commitment towards their research in their RAs.

As mentioned in section 1.4.1.1, to study how the voice of Med-E-Pops writers is crafted and projected, more than a single approach should be used. Therefore, since I needed to design a taxonomy that could help to interpret the linguistic evidence found in my data—regarding the presence of the writers, I first review below as a starting point some methodological studies on the rhetorical phenomenon in RAs first and then in impersonality. This review will allow me to develop an empirical methodology that should help me to measure the linguistic realisations of the concept of the *writer's voice* for further interpretation of this gradable concept in the Med-E-Pops genre.

Needless to say the same rhetorical item can fulfil different functions depending on the context in which it occurs. Therefore, it is difficult to isolate linguistic elements to be used as rigid discourse strategies. Although many taxonomies have been proposed and applied in the study of rhetorical phenomena in English medical discourse (see for instance Prince *et al.* 1982; Rounds 1982; Hübler 1983), Salager-Meyer's (1994) is a good starting point for the formal analysis of the data found in this dissertation. In her early taxonomy for the observation of rhetorical attenuation of medical discourse, Salager-Meyer (1994) establishes five categories for a formal analysis: shields, approximators, author's personal doubt and direct involvement, emotionally charged expressions and compound hedges. Shields (e.g. *appear, probably*) are elements that aim to protect the authors from potential discourse community denial when presenting research findings. The author is prudent when presenting his or her results and therefore introduces his or her findings in a humble way. Approximators (e.g. *occasionally, roughly*) are usually introduced in the discussion section of Med-RAs and aim to convey vagueness, as the researchers should not openly present absolute certainty or full command

of the research finding. The author's personal doubt and direct involvement (e.g. *I believe, to our knowledge*) imply full command of the subject but above all attempt to encourage dialogue between the members of the discourse community. This category has been questioned by many scholars such as Fortanet *et al.* (1998) as regards potential direct involvement as a defensive attitude. Emotionally charged expressions (e.g. *particularly encouraging*) are almost removed from modern science. As commented before in section 1.2.3, the discourse of science pleads for objectivity and therefore it is highly difficult to find any of these expressions in conventional medical genres. Finally, compound hedges combine different types of rhetorical attenuation (e.g. *it may suggest that*). To some extent, Salager-Meyers' (1994) approach to author's personal doubt and direct involvement in RAs casts light onto the interpretation of this dissertation results. However, whereas Med-E-RA authors may display their full command of the subject by using personal pronouns to openly project their voices, Med-E-Pops writers use other linguistic features that are different from personal pronouns, such as the use of reporting with direct and explicit reference to Med-E-RAs researchers. According to many researchers (*c.f.* Ivanič 1998; Vassileva 1998; Kuo 1999; Tang and John 1999; Hyland 2001, 2002a,b; Fløttum 2003a, 2003b; Harwood 2005; Martínez 2005; Lorés-Sanz and Murillo-Ornat 2007; Lorés-Sanz 2008; John 2009a; Hyland and Sancho 2012; among others), the use of personal pronouns is the clearest expression of the writers' voice (as mentioned in section 1.4.1.1). Therefore, as explained further in the data analysis section of Chapter 2, the use of personal pronouns is the most visible realisation of the writers' voice in the cline proposed in this analysis on the concept of the *voice* of Med-E-Pops writers. Example 4 aims to illustrate this point:

<i>Med-E-RA24</i>	<i>Med-E-Pop24</i>
(4) After <b>we performed</b> propensity matching to control for differences between comparator groups, patients with intraoperatively diagnosed PFO had similar rates of in-hospital stroke (2.3% vs 2.3%, P=.84) and hospital death (3.4% vs 2.6%, P=.11). Length of hospital stay (mean [SD] time, 12.7 [14.0] vs 12.1 [11.7] days; P=.21) and days spent in the ICU (mean [SD] time, 3.5 [7.7] vs 3.1 [6.2] days; P=.70) were also similar between those with intraoperatively diagnosed PFO and those without.en and 55 women).	<b>Further analysis indicated</b> that patients with intraoperatively diagnosed PFO had similar rates of in-hospital stroke and hospital death. Length of hospital stay and days spent in the ICU were also similar between those with intraoperatively diagnosed PFO and those without.

Hyland (1998) also approaches the rhetorical phenomenon by considering other parameters different from Salager-Meyers (1994).<sup>52</sup> He distinguishes two types of rhetorical attenuation: content oriented and reader oriented. The first type relates “to strictly epistemic functions and express doubt or confidence in statements” (1998: 186). The second type concerns “interpersonal issues in facilitating ratification” (1998: 186). Hyland’s (1998) work enlightens this dissertation data interpretation through his distinction between accuracy-oriented and writer-oriented categories included under the umbrella of content-oriented rhetorical strategies. Table 4—taken from Hyland (1998: 186)—shows that some linguistic features used in RAs and classified by Hyland as hedges of writers’ commitment can be interpreted as representations of the writers’ alignment with what is conveyed in the text. In the latter category he includes impersonal expressions such as the *passive*, *abstract rhetors* and *empty subjects*. These linguistic features—and not the other features displayed in this table—interpretable as Hedges writer commitment, are two of the most recurring features in the Med-E-Pops corpus. Two examples are shown below to illustrate this point:

(5) Medical records **were used** to analyse the relative risk of ovarian cancer. [Med-E-Pop26].

(6) A **new study**, published online July 20 in *Pediatrics*, **found** that the Internet is the newest place for kids to get exposure to positive messages on tobacco use. Although tobacco content was found on less than 1 percent of the pages that teens view, there were more pro-tobacco pages than anti-tobacco pages. [Med-E-Pop33].

Therefore, the observation of these recurring linguistic features should lead this dissertation not only to the interpretation of the Med-E-Pops writers’ commitment but also to the interpretation of the gradable phenomenon of voice in Med-E-Pops, which is the core of this study:

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52 In a later work Hyland defines hedges through contrast with boosters. The former indicate that “information is presented as opinion rather than accredited fact, or it may be to convey deference, modesty or respect for colleagues’ views” (2000: 87). Hedges are once again described as features that portray the level of writers’ involvement or commitment with what is conveyed in their own texts. On the other hand, boosters, according to Hyland (2000: 87), “allow writers to express their certainty in what they say and to mark involvement and solidarity with their audience, stressing shared information, group membership and direct engagement with readers”. Boosters have not been considered in this study because no tokens have been found in the Med-E-Pops corpus.

<i>CONTENT-ORIENTED</i>		<i>READER-ORIENTED</i>
<i>Accuracy-oriented</i>	<i>Writer-oriented</i>	
<i>Hedges propositional content</i>	<i>Hedges writer commitment</i>	<i>Hedges assertiveness</i>
<b>Attribute Type</b> Precision Adverbs: <ul style="list-style-type: none"> <li>• Content disjuncts</li> <li>• Style disjuncts</li> <li>• Downtoners</li> </ul> <b>Reliability type</b> Epistemic Lexical verbs <ul style="list-style-type: none"> <li>• Epistemic adjectives</li> <li>• Content disjuncts adverbs</li> <li>• Limited knowledge</li> </ul>	Epistemic Lexical Verbs: <ul style="list-style-type: none"> <li>• Judgmental</li> <li>• Evidential</li> </ul> Impersonal expressions: <ul style="list-style-type: none"> <li>• Passive</li> <li>• Abstract rhetors</li> <li>• Empty subjects</li> </ul> Modal verbs <ul style="list-style-type: none"> <li>• Thematic epistemic devices</li> <li>• Attribution to literature</li> </ul> Impersonal reference to: <ul style="list-style-type: none"> <li>• Method</li> <li>• Model</li> <li>• Experimental conditions</li> </ul>	Epistemic Lexical Verbs: <ul style="list-style-type: none"> <li>• Judgmental</li> <li>• Deductive</li> </ul> Personal attribution Personal reference to <ul style="list-style-type: none"> <li>• Method</li> <li>• Model</li> </ul> Assume shared goals <ul style="list-style-type: none"> <li>• Hypotheticals</li> <li>• Conditionals</li> </ul> Involve the reader <ul style="list-style-type: none"> <li>• Indirect questions</li> <li>• Refer to testability</li> </ul>

Table 4. Hyland's table on the most frequent hedge realisations and their functions (1998: 186).

Modality, for instance, widely studied in relation to rhetorical attenuation—Downing and Locke 1992; Hunston and Francis 2000; Nystrand 2001; Nuyts 2001; Piqué-Angordans *et al.* 2002; Vázquez *et al.* 2006; Mur-Dueñas 2010a; Lorés-Sanz 2011a; among many other researchers, has also been left out of this piece of research due to the almost complete absence of tokens in the Med-E-Pops. Med-E-Pops writers may not attempt to evaluate what has been conveyed in the corresponding Med-E-RA, which is the source for the Med-E-Pop, but to display a clear, simple and understandable adaptation of the final medical findings. Moreover, the potential absence of modality also prevents Med-E-Pops writers from both evaluating and showing their attitude to the research or the researchers, and therefore they avoid projecting any trace of their authorship or visibility.

The three most recurrent linguistic features associated with the concept of *voice* found in this piece of research—the use of personal pronouns, passive constructions and abstract rhetors—have been studied from various angles in applied linguistics. There are studies such as Oliver's (2004) that explore the rhetorical medical discourse in English; interpreting, associating and merging

different linguistic features from different linguistic levels. Oliver's analysis taxonomy included below shows how these concepts could be related:

<i>Pragmatic Categories</i>	<i>Functions in Discourse</i>	<i>Linguistic Items</i>	<i>Linguistic Level</i>
1. SHIELDS	To protect the subject and anticipate negative feedback or the so called "boomerang effect". Allows scientists to present their knowledge cautiously and introduce claims. (Salager-Meyer, 1994)	a)modal verbs b) semi-auxiliaries c)probability adjectives d) probability adverbs e)epistemic verbs	LEXICAL
2. APPROXIMATORS	To make things vague and to indicate probability. This is related to the author's avoidance of personal involvement and the impossibility of reaching absolute accuracy (Salager- Meyer, 1994).	Adjectives and/or adverbs of: a) quantity b) degree c) frequency d) time	
3. AUTHOR'S PERSONAL DOUBT AND INVOLMENT	To emphasise the interpersonal dimension: evaluate and assess one's material and negotiate the status of one's claims. Encourages dialogue with the audience and facilitates discussion (Hyland, 1998).	Non personal forms a) conditional b) First-person markers	MORPHOLOGICAL
4. AGENTLESS STRATEGIES	1) These are used to modify or even hide the author's attitude towards the content (Lewn, 1998). 2) To fulfil academic conventions, to seem more precise, more scientific (Salager-Meyer 2003).	a) agentless passive b) depersonalisation (active verbs with inanimate subjects and nominalisations).	SYNTACTICAL

Table 5. *Oliver's (2004: 181) taxonomy for the study of rhetorical attenuation in medical discourse.*

It was Martínez's (2001) seminal work on impersonality in medical discourse which eventually cast light onto the interpretation of the linguistic features associated with the expression of voice in Med-E-Pops. This study emphasises the importance of analysing impersonal structures as alternative realisations of the syntactic subject of writers' actions. Her understanding of how this impersonality can be perceived as a gradable feature in Med-RAs can also be extrapolated to the interpretation of how gradable the voice of the Med-E-Pops writers could also be, since this dissertation has obtained its results from Med-E-RAs and Med-E-Pops contrastive analysis. Figure 2 illustrates how Martínez's (2001) approach to impersonality in Med-RAs can be applied to the most recurring linguistic features associated with the expression of voice in Med-E-Pops. Her ideas of grading in a cline the lexico-grammatical realisations of the writers' impersonality in Med-RAs has also shown how to measure and interpret the writers' realisations of voice in Med-E-Pops. See figure 2 below:

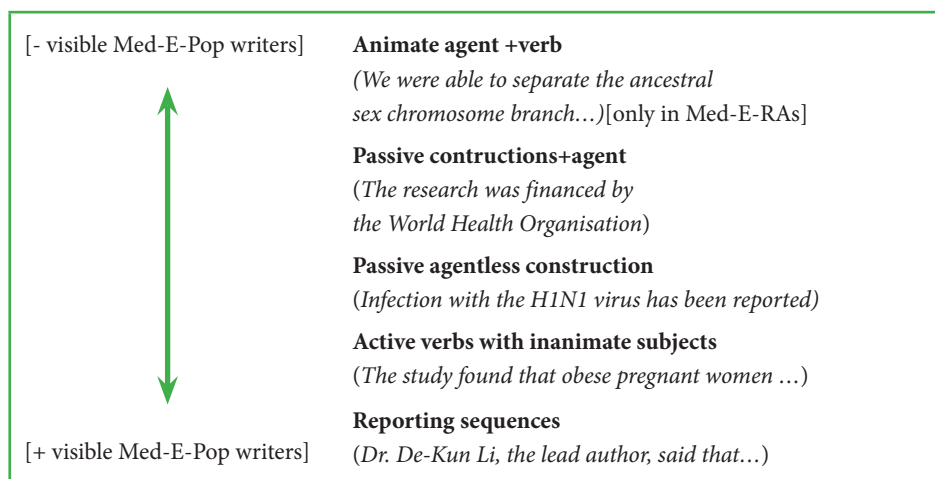


Figure 2. Cline of (in)visibility designed for the interpretation of the corpus.

This figure shows the four linguistic features that linguistically characterise the voice of the Med-E-Pops writers in this dissertation. That is, the use of; animate agent + verb constructions, passive constructions, active verbs with inanimate subjects (or abstract rhetors) and reporting. This last feature is conceived in this piece of research as a genre-specific syntactic construction—as explained in section 1.3 when dealing with the issue of medical popularizations such as JRV and WAs—which is considered the most visible representation of the voice of Med-E-Pops writer in this study, since these writers appear to decide what

should be reported and quoted and how. This linguistic evidence reveals that Med-E-Pops writers are more present in their texts when using reported speech than when using passive constructions because the syntactic agents of these constructions, despite not being mentioned, are assumed to be the researchers or the research institutions. As we move up the axis of the above figure 2 it could be interpreted that these linguistic features show a less visible Med-E-Pops writers' presence but a more visible Med-E-RAs authors' presence in the Med-E-Pops. Chapter 2 explains in depth how I obtained and developed this taxonomy in this contrastive data analysis. Chapter 2 also deals with the methodology utilised to gather and justify the corpora explored in this piece of research beyond Chapter 3. Conclusions drawn from the discussion of the results obtained are included in Chapter 4. In that chapter I will reflect on whether the linguistic choices that in this dissertation are considered to represent the voice of Med-E-Pops writers were triggered by the text communicative purposes, the generic context of Med-E-Pops, the dissemination channels, the target audience, the social and cultural values of the addressees, the willingness to reach absolute accuracy by the Med-E-Pops writers, the intention to reduce a potential conflict related to the research or perhaps a lack of commitment by the writers.





## CHAPTER 2

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# CORPUS AND METHODOLOGY

Implicit in scientific papers there are several lexico-grammatical choices whose textual effect is to depersonalise the research presented in the RAs depriving it from apparent human intervention. In the case of Med-RAs, this should be interpreted as a rhetorical convention shared by the members of the medical discourse community and characteristic of a genre-specific scenario. The assumed aim of such practice is to present the research as an objective process. As regards Med-E-Pops, this depersonalisation process can be taken to be a way for Med-E-Pops writers to detach themselves from the report made. However, whereas RAs researchers do not avoid projecting their authorship, although the research is narrated as depersonalised and objective, in the genre of popularizations writers simplify the scientific lexico-grammar used keeping the scientific rigour yet bringing the presence and voice of the Med-RAs researchers and not their own presence as Med-E-Pops writers.

Encouraged by the conclusions of my Master thesis and the limitations ensued from the analysis of that data (Herrando-Rodrigo 2010), I approached this study of medical popularizations from an utterly different angle: the concept of *voice* as a standpoint. My intention is to observe whether the recurrent generic and lexico-grammatical features that Med-E-Pops show could encapsulate the writers' voice and therefore their consequent (in)visibility. Hence, for a closer observation of these writers' generic and linguistic choices I aim to interpret whether the writers' voice disappears, is disguised, camouflaged or even masked in the Med-E-RA popularised version. The interpretation of the degree of visibility resulting from the Med-E-Pops projection of voice should aid this piece of research to contribute to the study of both the concept of *writer's voice* and the reliability of the medical electronic popularizations genre—since the apparent absence of these reporters' mediation builds trust around the Med-E-Pops genre as vehicles of medical knowledge dissemination.

This chapter thus, shows how I gathered the corpora (section 2.1) and provides a description of the texts included, and it also shows how I aim to

approach the generic and lexico-grammatical study in order to explore the potential (in)visibility of Med-E-Pops writers and the implications of this (in)visibility with respect to the Med-E-Pops genre.

## 2.1 DESCRIPTION OF THE CORPUS

To collect a comparable corpus, I first selected 100 Med-E-Pops published in the year 2009—and their corresponding Med-E-RAs—which shared generic characteristics, although they were published in different electronic journals. Thanks to a research stay in the English Studies Department at Sheffield University (UK) I had open access to all the medical journals in which Med-E-RAs, as the source for Med-E-Pops, were published.<sup>53</sup> The electronic journals were general publications aiming to reach the readers' market providing them with reliable information related to health issues or publications specially designed for practitioners. Some of the electronic journals were suggested for the elaboration of my MA Thesis (Herrando-Rodrigo 2010) and ratified in my 2010 survey-based approach as is explained further in this section. These electronic publications were: *Doctor's Guide*, *New York Times Health Guide*, *Johns Hopkins News Release*, *Health Day News*, *Medical News Today*, *Science Daily* and *Nature*.<sup>54</sup> Forty pairs (each pair including a RA and its corresponding electronic popularization) were selected during the year 2010.

### 2.1.1 Corpus collection

Two of the limitations ensued from my Master Thesis (Herrando-Rodrigo 2010) on the study of self-mentions and engagement markers in Urology Med-RAs and electronic popularizations enlightened the criteria for the selection of this corpus. These limitations were:

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53 I would like to acknowledge CAI (*Caja de Ahorros de la Inmaculada Aragón* nowadays part of *Ibercaja* bank group) and my local authorities (*Diputación General de Aragón*) for the research scholarship *Programa Europa XXI* (CH 34/09) which enabled me to be a visiting researcher at the English Department of the University of Sheffield in 2009. This mixed commission (CONAI+I and CAI) funded the research visit which was a key experience to gather the corpora for the present PhD.

54 It must be noted that participants refer to *Nature* on-line publication which is the open access electronic publication version of *Nature*. *Nature* on-line displays popularised versions of scientific RAs already published in this scientific journal.

- i) The electronic popularizations studied were not matched with any Med-RAs, that is, these popularizations had no direct relation with the Med-RAs selected, apart from the medical issue they reported on (Hypospadias), and so they were not comparable counterparts. The popularizations were not adaptations of the 20 Med-RAs selected since the main variable to select the Med-RAs was the scientific impact of the Med-RAs in the urology field. Aided by my urology informants and the Faculty of Medicine library technicians I chose<sup>55</sup> the most influent Med-RAs dealing with Hypospadias in the last 20 years (1985-2005), whereas to find the popularizations I just searched Hypospadias in the Internet and then selected the popularizations from the webs displayed by the search engine.
- ii) A second limitation of that study was the medical issue. As there is some agreement (see Lafuente-Millán 2008; Herrando-Rodrigo 2010) urology researchers may use certain rhetorical conventions when writing RAs different from the rest of the medical specialities. Delimiting the corpora just to one medical issue may largely restrict the final results, and therefore, a wider range of medical issues was suggested for further research.

Therefore, to cope with potential limitations of this new corpus collection I ensured first the usefulness of this study on electronic medical popularizations turning to medical professionals as participants of a survey-based study. This allowed me to select from the preliminary corpus selected, a remarkable range of pairs—Med-E-RAs and Med-E-Pops—that represented a valid collection of texts for the study of the writers' voice in Med-E-Pops. Besides, to ensure the validity of the corpora under study I decided to widen the variable of the medical topics selecting an ample variety of them: those selected by the Med-E-Pops publications, which were supposed to be of interest for the potential Internet readers'.

Hence, to validate the popular sources of the Med-E-Pops corpus under study I carried out a survey-based study among 110 professionals, from 20 different medical specialities (see Appendix 2 to read the questionnaire). The average working experience of these medical participants was 17.82 years (with five years being the minimum and 40 years of experience the maximum). Table 6 below represents the distribution of junior/senior participants. They were asked

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55 I owe my gratitude to Dr. José Manuel Sánchez Zalabardo, interns' coordinator of *Hospital Clínico Universitario* and associate teacher in the Urology Department at the Faculty of Medicine (University of Zaragoza).

to indicate their years of experience in an attempt to observe whether it should influence somehow their use of medical electronic popularizations. It is apparent from this table that participants with fewer years of experience were more willing to participate than senior doctors participants:

<i>Range of years of experience of medical informants</i>	<i>Number of participants per age range</i>	<i>Percentage over the total number of participants</i>
1-10 years	30	27.27
10-20 years	35	31.81
20-30 years	26	23.63
30-40 years	19	17.27

Table 6. *Percentage of junior/senior medical participants.*

All the participants worked at the two University hospitals (*Hospital Clínico Universitario Lozano Blesa* and *Hospital Universitario Miguel Servet*, both from Zaragoza) and at the University of Zaragoza, being involved in the teaching training in the Degree of Medicine at the Faculty of Medicine. Although at first I aimed to carry out a more ambitious study including Health Care Centres as participants, I narrowed the scope of this survey-based study to the 110 professionals who were working at these two main hospitals and who were teaching at the same time at the University. All the professionals interviewed said that they read medical articles written in English very often. These participants who have a double tenure, clinical post at Hospitals and teaching and researching at the Faculty of Medicine, research in English and therefore publish in English. Therefore, they are very aware of the need to disseminate medical knowledge in English for professional purposes and they are also aware of their patients need-to-know. As shown in table 7 below, the specialities of the practitioners who kindly participated in this survey-based study were varied (20):

Table 7 shows that there was a varied range of specialities in this study. My aim in collecting such an amalgam of specialists' opinions was to cover the range of topics that the selected Med-E-Pops covered, in comparison with my Master Thesis, which only dealt with a very specific medical issue within the

field of urology. There were only two specialities that had a higher than 10% participation in the study than the rest: Accidents and Emergency and Obstetrics and Gynaecology. This is due to the fact that not every hospital guard counts on specialists involved in both the teacher training at the Faculty and the clinical task at hospitals. No gender parameters were taken into account.

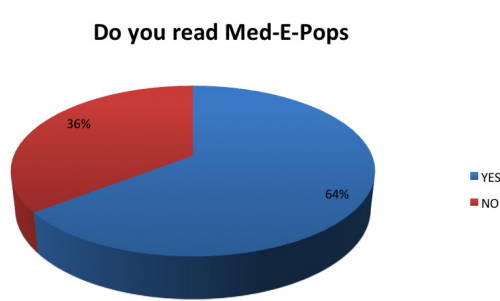
	<i>Number of participants by speciality</i>	<i>Percentage over total number of medical participants per speciality</i>
A&E (Accidents and Emergency)	15	13.6
Anaesthesia & Intensive Care	8	7.3
Cardiology	2	1.8
Dermatology	3	2.7
Haematology	1	0.9
Internal Medicine	8	7.3
Microbiology	4	3.6
Neurology	9	8.2
Obstetrics & Gynaecology	12	10.9
Ophthalmology	10	9.1
Otorhinolaryngology	2	1.8
Paediatrics	4	3.6
Paediatric surgery	2	1.8
Pharmacology	1	0.9
Physical Medicine & Rehabilitation	5	4.5
Pneumonology	5	4.5
Radiology	6	5.5
Surgery	5	4.5
Traumatology	2	1.8
Urology	6	5.5
<b>Total</b>	<b>110</b>	<b>100.0</b>

Table 7. Number of practitioners classified according to their medical speciality and percentage over the total number of participants.

These questionnaires were distributed in every service involved in this study. I spoke personally with at least one of the participants of each speciality to ensure that participants understood what I meant by “medical popularization” and what my aim was in this study in particular—this information was also included in the questionnaire. Four months after the distribution of the questionnaire some of the participants in charge of the distribution and collection admitted to have struggled with the last two questions (see Appendix 2): 4. - *If you think that research articles differ from popularizations, what do you think the differences are?* and 5.- *Do medical popularizations follow the same IMRAD pattern as experimental research articles do?*

The information obtained regarding these two questions based on rhetorical conventions and metalanguage was eliminated—because of the linguistic (specific) character of its content—from this study but kept for further research. I did not consider this elimination relevant since the objective of the survey was to validate medical popularizations and their e-journals, from the point of view of practitioners, as medical knowledge dissemination vehicles (outside de academia). Eventually, this process took me longer than expected because not all the participants agreed to cooperate in the study: they are bombarded everyday with many different surveys and questionnaires from various sources (laboratories, universities, institutions, etc.). Besides, the participants’ struggle with the metalinguistic questions and the consequent explanation made me invest an unexpected amount of energy and time just in the information collecting process.

As regards the results obtained, 71 (64.5%) out of 110 participants affirmed that they read Med-E-Pops either to be up-to-date with their discipline-related topics or because they lack time to keep up to date with the number of Med-RAs which are published everyday. The remaining 39 participants (35.5%) openly stated that they do not read Med-E-Pops, as graph 2 summarises below:



Graph 2. Graphical distribution of participants’ answers to question number 2, “Do you read Med-E-Pops?”

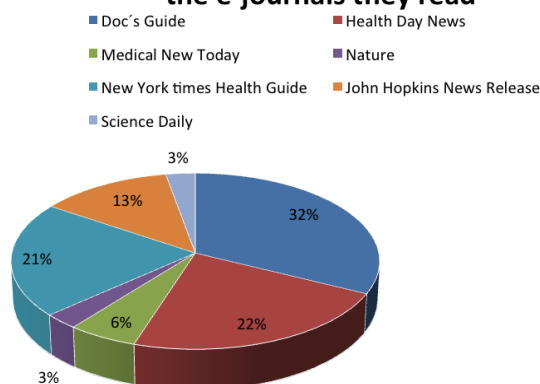
A remarkable percentage of participants admitted to read Med-E-Pops. The participants who answered positively to the previous question were also asked to name which e-journals they read. Table 8 displays the distribution of the number of answers per e-journal:

<i>Med-E-Pop Journal</i>	<i>Raw counts</i>	<i>Percentage</i>	<i>Med-E-Pops selected</i>
<i>Doc's Guide</i>	23	32.39%	13
<i>New York Times Health Guide</i>	15	21.13%	9
<i>Health Day News</i>	16	22.54%	9
<i>Johns Hopkins News Release</i>	9	12.68%	5
<i>Medical News Today</i>	4	5.63%	2
<i>Science Daily</i>	2	2.82%	1
<i>Nature</i>	2	2.82%	1
<b>TOTAL</b>	<b>71</b>	<b>100%</b>	<b>40</b>

Table 8. *E-journals suggested by medical informants, number of answers and the correspondent number of Med-E-Pops chosen to select the Med-E-Pops corpus.*

These percentages were used to select an equivalent number of samples based on the results from the survey-based study. Therefore, I took my participants' answers as a reference to select the number of Med-E-Pops to take from each e-journal in order to conform my Med-E-Pops corpus. Graph 3 below illustrates these results:

### Distribution of informants answers according the e-journals they read



Graph 3. *Distribution of informants' answers according the e-journals they read.*



Hence, in the collection process I accessed the home page of these Med-E-Pops publications suggested by my informants and read the Med-E-Pops they showed that day. I explored whether those texts fulfilled the characteristics shown below:

<i>Criteria for selecting Med-E-Pops</i>	<i>Realisation of criteria</i>
Number of words	400-500 words because it seemed to be the average number of words.
Med-E-Pops mention Med-E-RAs sources	The name of the Med-E-RA journal was always mentioned and hyperlinked to the Med-E-RA abstract
Date of the Med-E-RAs publication should be mentioned in case the reader wants to look for the Med-E-RAs	The date of publication was mentioned as well as the names and affiliation of the Med-E-RAs researchers
Medical issue is not repeated in the corpus	I chose different research topics despite their medical speciality
Lexico-grammatical choices are easy to understand but not tentative, persuasive or informal in order to address and engage with the Internet audience	The lexis and syntactical constructions were simplified. All the texts seemed to use: Nominal phrases representing the researchers Passive constructions Use of modality Use of simple discourse connectors Abstract rhetors
Direct interpellation from the Med-E-Pops writers	Direct and indirect reporting sequences from the Med-E-RAs researchers which always reflected the same information gathered in the Med-E-RAs
Med-E-Pops do not change the scientific information displayed in the corresponding Med-E-RAs	Med-E-Pop adapted the scientific information but they did not manipulate such information
The corresponding Med-E-RAs had to: <ul style="list-style-type: none"> <li>— display IMRAD generic structure</li> <li>— be co-authored</li> <li>— be published in a JCR journal</li> </ul>	Only Med-E-Pops whose corresponding Med-E-RAs met those requirements were selected

If a Med-E-Pop met the criteria mentioned above, I traced the corresponding Med-E-RA and if that RA met the IMRAD generic conventions, among other variables included in section 2.1.2.1, I established a pair.

The corpora can be defined as a diachronic comparable specialised collection of a Med-E-Pops corpus and a Med-E-RAs corpus. It was comprised by a total amount of 203,905 words—40 Med-E-Pops (21,840 words) and by their source texts, 40 Med-E-RAs (182,065 words)—a size that, I hope, can be considered to

afford some representativeness to this study outcomes and also offer reliable results. Although all the data related to these texts (titles, dates, source of publication and writers) can be found in Appendix 1, table 9 below summarises the names of the e-journals and the research journals these Med-E-Pops reported on:

<i>Med-E-Pop Journal</i>	<i>Medical Research Journals</i>
<b>Doc's Guide</b> (13 Med-E-Pops)	<i>American College of Surgeons</i> <i>Gynecologic Oncology</i> <i>The Lancet</i> (2 Med-RAs selected from this journal) <i>Journal of the National Medical Association</i> <i>Journal of Clinical Endocrinology Metabolism</i> <i>The British Journal of Medicine</i> <i>Journal of the American Medical Association</i> (3 Med-RAs selected from this journal) <i>Clinical Cancer Research</i> <i>Archives of Internal Medicine</i>
<b>New York Times Health Guide</b> (9 Med-E-Pops)	<i>An International Journal of Obstetrics and Gynaecology</i> <i>Human Reproduction</i> <i>British Medical Journal</i> <i>The Lancet</i> (2 Med-RAs selected from this journal) <i>Journal of Allergy and Clinical Immunology</i> <i>Journal of the American Medical Association</i> <i>American Journal of Epidemiology</i> <i>New England Journal of Medicine</i>
<b>Health Day News</b> (9 Med-E-Pops)	<i>Archives of Neurology</i> <i>Autism</i> <i>Plos Genetics</i> <i>Journal of Palliative Medicine</i> <i>Pediatrics</i> (2 Med-RAs selected from this journal) <i>Clinical Journal of the American Society of Nephrology</i> <i>Journal of Epidemiology and Community Health Neurology</i>
<b>Johns Hopkins News Release</b> (5 Med-E-Pops)	<i>Archives of Internal Medicine</i> <i>Journal of Consulting and Clinical Psychology</i> <i>Journal of Allergy and Clinical Immunology</i> <i>The Journal of Urology</i> <i>New England Journal of Medicine</i>
<b>Medical News Today</b> (2 Med-E-Pops)	<i>The Lancet</i> <i>Annals of Internal Medicine</i>
<b>Science Daily</b> (1 Med-E-Pops)	<i>International Journal of Cancer</i>
<b>Nature</b> (1 Med-E-Pops)	<i>PlosPathogens</i>

Table 9. Names of the e-journals and the research journals these Med-E-Pops reported on.

Regarding the Med-E-Pops journals' publication policy I have insistently attempted over the last three years (2010-13) to contact Med-E-Pops publications in order to reflect on whether the influence of internal guidelines, publication policies, etc. might affect the Med-E-Pops writers' self-representation, their voice, and consequently, their visibility. Moreover, that information would also help to define the Med-E-Pops genre under study. Denise Grady, a reporter from the *New York Times Health Guide*, was the only person who answered my e-mail on 21<sup>st</sup> May 2012. This PhD does not consider her contribution representative, yet indicative, of what happens in the Med-E-Pops publication process. I include her answer to my email below:

1. *Do you write on the research article you find interesting? Yes Or, Are you told what to write about?*

Also yes, but usually subjects are suggested and not presented as an order. And if there is news in our field, some in which we are the in-house experts, we have to cover it even if that means halting work on something else.

2. *Do you have to follow any writing style?*

There is a style manual full of rules. A few hundred pages of rules. Copy editors here obey it. I think you cannot see it online.

3. *Do you have informal interviews with the researchers? How do you decide what to quote from the article?*

We have interviews and we use the most interesting and illuminating things the person has said.

4. *Have you got to quote the researchers' position and source of the research articles?*

Yes, we have to identify our sources and who is paying for their research.

## **2.1.2 Brief description of the corpus**

Having introduced the process of corpus collection, the following sections (2.1.2.1 and 2.1.2.2) provide a brief description of this corpus.

### **2.1.2.1 Brief description of the Med-E-Pops corpus**

The 40 Med-E-Pops were published in seven different American and British electronic journals and were written in English. They were numbered from 1 to 40 following the date of publication in the electronic journal (see Appendix

1). The corpus of Med-E-Pops amounts to a total of 21,840 words. The average number of words per Med-E-Pop was 546.

All the texts were single authored. As regards the journals of publication, one of them, *DocGuide*, is specially designed for doctors since Internet readers need to register and select their profile as health professionals. Nonetheless, any Internet user can enter the website and sign up. The reporters are said to be doctors who write these versions. *The New York Times Health Guide* is a special section that one of the main newspapers in the world devotes to health issues. The reporters are said to be specialised journalists. As for the rest of the publications—*Johns Hopkins News Release*, *Health Day News*, *Medical News Today*, *Science Daily* and *Nature*—it can be read on their home page that health specialists (doctors, nurses, researchers, the RA researchers or students) are in charge of writing these Med-E-Pops. These publications can be said to offer a reader-friendly interpretation of science. However, the survey-based approach carried out among practitioners validates these publications as texts which disseminate medical knowledge. All of them can be said to belong to the same kind of popular medical texts, and thus, there are not different levels of informality since all these Med-E-Pops aim at building trust around the research they report on. Although Chapter 3 analyses and describes the genre of Med-E-Pops in depth, I include below table 10 that schematically describes these electronic publications:

<i>Med-E-Pop Journal</i>	<i>Characteristics</i>
<p><b><i>Doc's Guide</i></b> (13 Med-E-Pops)</p>	<p>It does not name the Med-E-Pops writers            It does not mention how to reach Med-E-Pops writers            It does not mention the background and prestige of the Med-E-Pops writers in the home page            It does not mention the background and prestige of the Med-E-Pops publication            It does not advertise medical products            It does not include hyperlinks to other related Med-E-Pops            It includes informal interviews with the Med-E-RAs researchers            It does not explicitly state the nationality of the publication            The potential audience is conformed by doctors or medical personnel</p>
<p><b><i>New York Times Health Guide</i></b> (9 Med-E-Pops)</p>	<p>It names the Med-E-Pops writers            It mentions how to reach Med-E-Pops writers            It does not mention the background and prestige of the Med-E-Pops writers in the home page            It mentions the background and prestige of the Med-E-Pops publication            It does not advertise medical products</p>

<i>Med-E-Pop Journal</i>	<i>Characteristics</i>
<i>Doc's Guide</i> (13 Med-E-Pops)	<p>It does not advertise medical products</p> <p>It does not include hyperlinks to other related Med-E-Pops</p> <p>It includes informal interviews with the Med-E-RAs researchers</p> <p>It does not explicitly state the nationality of the publication</p> <p>The potential audience is conformed by doctors or medical personnel</p>
<i>New York Times Health Guide</i> (9 Med-E-Pops)	<p>It names the Med-E-Pops writers</p> <p>It mentions how to reach Med-E-Pops writers</p> <p>It does not mention the background and prestige of the Med-E-Pops writers in the home page</p> <p>It mentions the background and prestige of the Med-E-Pops publication</p> <p>It does not advertise medical products</p> <p>It includes hyperlinks to other related Med-E-Pops</p> <p>It includes informal interviews with the Med-E-RAs researchers</p> <p>It explicitly states that it is an American publication</p> <p>The potential audience are supposed to be readers of <i>The New York Times</i> on line version</p>
<i>Health Day News</i> (9 Med-E-Pops)	<p>It names the Med-E-Pops writers</p> <p>It mentions how to reach Med-E-Pops writers</p> <p>It mentions the background and prestige of the Med-E-Pops writers in the home page</p> <p>It mentions the background and prestige of the Med-E-Pops publication</p> <p>It does not advertise medical products</p> <p>It does not include hyperlinks to other related Med-E-Pops</p> <p>It includes informal interviews with the Med-E-RAs researchers</p> <p>It explicitly states that it is an American publication</p> <p>The potential audience is conformed by Internet readers who search reliable medical Med-E-Pop adaptations</p>
<i>Johns Hopkins News Release</i> (5 Med-E-Pops)	<p>It names the Med-E-Pops writers</p> <p>It mentions how to reach Med-E-Pops writers</p> <p>It mentions the background and prestige of the Med-E-Pops writers in the home page</p> <p>It mentions the background and prestige of the Med-E-Pops publication</p> <p>It does not advertise medical products</p> <p>It does not include hyperlinks to other related Med-E-Pops</p> <p>It includes informal interviews with the Med-E-RAs researchers</p> <p>It explicitly states that it is an American publication</p> <p>The potential audience is conformed by Internet readers and medical personnel</p>
<i>Medical News Today</i> (2 Med-E-Pops)	<p>It does not name the Med-E-Pops writers</p> <p>It does not mention how to reach Med-E-Pops writers but you can tweet the editors</p>

<p><b>Medical News Today</b> (2 Med-E-Pops)</p>	<p>It does not mention the background and prestige of the Med-E-Pops writers in the home page It does not mention the background and prestige of the Med-E-Pops publication It does not advertise medical products It does not include hyperlinks to other related Med-E-Pops It includes informal interviews with the Med-E-RAs researchers It explicitly states that it is an British publication</p>
<p><b>Science Daily</b> (1 Med-E-Pops)</p>	<p>It does not name the Med-E-Pops writers It does not mention how to reach Med-E-Pops writers It does not mention the background and prestige of the Med-E-Pops writers in the home page It does not mention the background and prestige of the Med-E-Pops publication It advertises medical insurances It does not include hyperlinks to other related Med-E-Pops It includes informal interviews with the Med-E-RAs researchers It does not explicitly state the nationality of the publication The potential audience is conformed by Internet readers who search reliable medical Med-RAs adaptations</p>
<p><b>Nature</b> (1 Med-E-Pops)</p>	<p>It names the Med-E-Pops writers It mentions how to reach Med-E-Pops writers It mentions the background and prestige of the Med-E-Pops writers in the home page It mentions the background and prestige of the Med-E-Pops publication It does not advertise medical products It includes hyperlinks to other related Med-E-Pops It does not include informal interviews with the Med-E-RAs researchers It explicitly states that it is an American publication The potential audience is conformed by readers who aim to stay up-to-date with the latest scientific news</p>

Table 10. *General characteristics of each e-journal publications*

The potential audience comprises a wide range of readers who should be competent in English—either native speakers or not—and who are regular Internet users. This international readership may master different levels of computer command although finding Med-E-Pops just requires accessing the e-journals. Different characteristics of this make readers—and medical personnel—trust not only these publications but also the research they report. The readers can be regular consumers of medical information who enjoy keeping up-to-date with the most recent health research, or they may be readers who sporadically seek information

about a medical issue they might be suffering from. It should not be overlooked that the high demand of this broad readership spectrum, which displays a potential wide variety of cultural, professional and personal backgrounds, has inspired e-journals to come to a generic agreement—as the *New York Times* journalist suggested in her email. In other words, the medium and the discourse community (writers and readers) have construed and therefore accepted a valid generic evolution of the medical dissemination article or medical popularization.

### **2.1.2.2. Brief Description of the Med-E-RAs corpus**

The corpus of Med-E-RAs amounts to a total of 182,065. The average number of words per article is 4,452, once the abstract, footnotes, acknowledgements and bibliography were removed.

The 40 Med-E-RAs published in international journals had a high impact factor classified in the first quartile of their category (Q1) and therefore they are addressed to members of the same discourse community. The Med-E-RAs were downloaded from the Internet in word or PDF format. The 28 journals were: *American Journal of Surgery*, *Gynaecologic Oncology*, *The Lancet*, *Journal of the National Medical Association*, *Journal of Clinical Endocrinology Metabolism*, *British Journal of Medicine*, *Journal of the American Medical Association*, *Clinical Cancer Research*, *Archives of Internal Medicine*, *An International Journal of Obstetrics and Gynaecology*, *Human Reproduction*, *Journal of Allergy and Clinical Immunology*, *American Journal of Epidemiology*, *New England Journal of Medicine*, *Archives of Neurology*, *Autism*, *PlosGenetics*, *Journal of Palliative Medicine*, *Pediatrics*, *Clinical Journal of the American Society of Nephrology*, *Journal of Epidemiology and Community Health*, *Neurology Journal*, *Archives of Internal Medicine*, *Journal of Consulting and Clinical Psychology*, *The Journal of Urology*, *Annals of Internal Medicine*, *International Journal of Cancer* and *PlosPathogens*.

All the Med-E-RAs selected in the corpus were co-authored and all of the researchers were mentioned by name. The number of authors varied and the Med-E-RAs were first published on line in late 2008 and 2009. To create a pair (Med-E-RA and Med-E-Pops), the Med-E-RAs were selected because their corresponding Med-E-Pops fulfilled in first place the criteria mentioned in section 2.1. As regards language, not all the authors shared English as their first language. The language used is English and the genre is medical academic articles published in research journals of an international impact. Some of the articles studied have been written by non-Anglophone scholars although all of

Medical Research Journal	Country	Medical Subject	Quartil	Sjr
American Journal of Surgery	USA	Surgery	Q1	1.035
Gynecologic Oncology	USA	Obstetrics and Gynecology	Q1	1.459
The Lancet	UK	Medicine (Miscellaneous)	Q1	4.487
Journal of the National Medical Association	USA	Medicine (Miscellaneous)	Q1	0.444
Journal of Clinical Endocrinology Metabolism	USA	Endocrinology	Q1	2.572
British Journal of Medicine	UK	Medicine (Miscellaneous)	Q1	1.400
Journal of the American Medical Association	USA	Medicine (Miscellaneous)	Q1	4.863
Clinical Cancer Research	USA	Oncology	Q1	3.512
An International Journal of Obstetrics and Gynaecology	UK	Obstetrics and Gynecology	Q1	1.642
Human Reproduction	UK	Obstetrics and Gynecology	Q1	2.066
Journal of Allergy and Clinical Immunology	USA	Immunology	Q1	4.142
American Journal of Epidemiology	UK	Epidemiology	Q1	2.488
New England Journal of Medicine	USA	Medicine (Miscellaneous)	Q1	9.740
International Journal of Cancer	USA	Oncology	Q1	2.145
Archives of Neurology	USA	Neuroscience (Miscellaneous)	Q1	2.751
Autism	UK	Psychology	Q1	0.993
Plos Genetics	USA	Cancer Research	Q1	3.795
Journal of Palliative Medicine	USA	Medicine (Miscellaneous)	Q1	0.875
Pediatrics	USA	Pediatrics, Perinatology and Child Health	Q1	2.545
Clinical Journal of the American Society of Nephrology	USA	Transplantation	Q1	1.778
Journal of Epidemiology and Community Health	UK	Public Health, Environmental and Occupational Health	Q1	1.317
Archives of Internal Medicine	USA	Internal Medicine	Q1	4.775
Journal of Consulting and Clinical Psychology	USA	Psychiatry and Mental Health	Q1	2.840
The Journal of Urology	USA	Urology	Q1	1.844
Archives of Internal Medicine	USA	Internal Medicine	Q1	4.775
Annals of Internal Medicine	USA	Medicine (Miscellaneous)	Q1	4.667
Neurology	USA	Neuroscience (Miscellaneous)	Q1	2.498
PlosPathogens	USA	Medicine (Miscellaneous)	Q1	2.639

Table 11. Impact factor of the journals at the time of Med-E-RAs publication (2009).



them were published in prestigious American and British journals (see <http://www.scimagojr.com/journalsearch.php>) as table 11 below illustrates. These publications are organised according to the chronological order followed to gather the corpus:

It could be alleged that non-Anglophone scholars were at a disadvantageous position when contrasted with native speakers of English who belong to the same discipline or discourse community as far as publishing academic articles in international journals is concerned. However, as has just been commented above, when we read a published English RA, we do not know if that article has been revised, corrected or even translated by a native speaker familiarised with academic publications. Among other scholars, Ferguson (2007) puts into question the global spread of English in the scientific field. On the one hand he points out that nowadays, due to several reasons such as the growing use of English as a University teaching medium, the English language represents a kind of threat to national languages—and therefore national identities. Swedish and Norwegian are instances of such phenomenon. Nevertheless, on the other hand, he also describes another situation, a situation of inequality in academic knowledge production. He (2007: 32) claims that “while English remains a barrier to publication for some scholars, it is non-language factors that constitute the greater impediment”.

Turning our attention to the formal features of medical RAs it can be said that the Med-E-RAs included in the corpus display a conventionalised structure based on moves. I describe below (see section 2.2.1.2) that for the medical RA, this structure includes the following moves: Introduction, Methods (and Patients), Results and Discussion.

## **2.2 ANALYSIS OF DATA**

Data analysis has been carried out from a qualitative angle although the data interpretation is based on quantified textual evidence—measured in this dissertation as explained below. For an overall interpretation of this multilevel analysis of Med-E-Pops, the data have been manually scanned. No computer tools have been used in this analysis firstly to ensure a closer observation of the Med-E-Pops genre (see section 2.2.1) and secondly to be more able to unveil how Med-E-Pops writers project their voice in the texts under study by using several lexico-grammatical features (see section 2.2.2).

## 2.2.1 Approaches to interpret data

To contextualise the concept of the *writers' voice* this dissertation aims to observe closely the background in which these writers' voices and their ensuing visibility are projected. Studying this context I aim to find out, among other things, whether it is the Med-E-Pops genre itself which constrains or models the writers' voices. For such interpretation I will first describe how I aim to approach the study of the genre relations between Med-E-RAs and Med-E-Pops (see section 2.2.1.1). Afterwards, section 2.2.1.2 will present my approach to the contrastive analysis of the Med-E-RAs genre and the Med-E-Pops genre. Having stated the methodological study of situation in which Med-E-Pops writers' voice emerges, section 2.2.2 introduces how the genre and lexicogrammatical analysis has been designed in order to approach the concept of *voice* in Med-E-Pops.

### 2.2.1.1 *Approaches to the study of generic relations between the Med-E-RAs genre and the Med-E-Pops genre*

To date various methods have been developed and introduced to explore genre studies and genre relations. Moreover, prior studies that have noted the influence of existing genres on derived electronic genres (*c.f.* Crowston and Williams 2000; Crystal 2001; Askehave and Ellerup Nielsen 2005; Myers 2010; Luzón-Marco 2012; Campagna *et al.* 2012) led this author to first revise existing literature on genre relations that could enlighten the interpretation of the present data and the definition of the Med-E-Pops genre. By observing how previous literature has established genre models to study relations among genres I intended to find the best methodology applicable to the interpretation of the data obtained in this study. Therefore, to study the genre relations between Med-E-RAs and their popular electronic versions encoded as Med-E-Pops, section 1.2 explores several aspects related to genre studies summarised in table 12 displayed below:

<i>Genres Studies</i>	<i>Tenets</i>
Swales (1990, 2004)	<p>Swales (1990) highlights communicative purpose as the key defining aspect of a given genre. Nonetheless, an analysis of the discourse community, its values, goals, repertoires, etc. is also essential to approach genre.</p> <p>Swales (2004) problematizes the analysis of an isolated genre and stated that genres tend to occur as constellations. These constellations of genres can be of several types: hierarchies, driven by the different values attached to genres within a specific field; chains, chronologically ordered; sets, comprising the particular genres an individual engages in; and networks, comprising all the possible genres available for a group.</p>
Bhatia (1993, 2004)	Bhatia's (2004) generic integrity conceives genre relations as "a socially constructed typical constellation of form-function correlations representing a specific professional, academic or institutional communicative construct realizing a specific communicative purpose of the genre in question" (2004: 123).
Bazerman (1994)	Bazerman (1994) distinguishes between genre systems and genre sets stating that whereas genre set represents only the work on one side of a multiple person interaction, the system of genres "would be the full set of genres that instantiate the participation of all the parties" (1994: 98-99).
Devitt (1991, 1994)	The set of genres both restrict the profession's activities and relationships to those embodied in the genre system and enable the most effective and efficient response to any recurring situation.
Orlikowski and Yates (1994)	<p>Their findings reveal that the wide selection of communicative practices existing in a community are shaped and changed in response to community norms, project events, time pressure and media capabilities.</p> <p>These researchers affirm that communication is an essential element in the organizing process through which social structures are produced, reproduced and changed. According to these previously named scholars, a genre established within a particular community serves as an institutionalised template for social action that shapes the ongoing communicative actions of community members through their use of it. Members of these communities do not depend on a single genre for communication.</p>
Tardy (2003)	Networks are part of a system of interactive genres. The users, as referred above, can be varied. There are multiple discourse communities that coexist and overlap within disciplines and consequent compulsory steps given towards the bureaucratic institutions to which grant funding could be addressed. Tardy (2003) agrees that writers gain knowledge of the genre network by having access to the practice community and colleagues interaction. Thus, writers learn how to address to the discourse communities of the different genre system by being exposed to them.

<i>Genres Studies</i>	<i>Tenets</i>
Askehave and Nielsen (2005)	<p>Askehave and Ellerup Nielsen (2005) suggest approaching electronic genres as two dimensional basing their analysis on the exploration of genre communicative purpose, the moves, hyperlinks and rhetorical strategies.</p> <p>These researchers affirm that when consuming web texts, the web users employ two different cognitive capacities and demonstrate two different types of behaviour when they shift from the reading to the navigating mode and <i>vice versa</i>. The concept of <i>modal shift</i> in hypertexts reading offers an interesting perspective on web genres and is a key distinction in the traditional genre analysis model. Thus, these researchers (2005: 127) suggest that what the analysis of web genres need: “[i]s an extension of the genre model to account for the fact that a web text also functions in the navigating mode where the text, due to its media constraints, becomes an interactive medium, used actively to navigate the web site”.</p>

Table 12. *Summary of genre relations’ main tenets applicable to this methodology followed in this dissertation.*

As the summary displayed above shows, Swales (2004) believes that the communicative purpose of a genre, together with its discourse community are decisive constituents in a given genre. Bhatia (2004) adds to the previous statement that the specific professional, academic or institutional context of a genre may influence the form and function of that given genre. Although both Swales (2004) and Bhatia (2004) base their genre analysis model on a sender-oriented view and on communicative and functional purposes of a genre, we must consider to what extent Med-E-Pops readership—as members of the Med-E-Pops discourse community—participate in the modelling of the genre,<sup>56</sup> considering there is no exchange among the members of this discourse community (Bazerman 1994)—Med-RAs researchers do not interact with Med-E-Pops writers or with the Med-E-Pops readers. Since Med-E-Pops genre is not restricted to professional activities (Devitt 1991, 1994), participants are incapable of modelling the genre not even as a response to the community norms, project events or time pressure (Orlikowski and Yates 1994). However, as the survey-based study (see section 2.1) carried out within the framework of this dissertation indicates, the discourse community of Med-E-Pops genre coexists

56 The attitudes of the Med-E-Pops recipients as compared to that of the medical personnel may seem to be unexplored in the present dissertation. Nonetheless, the study of recipients’ attitudes opens a broad and complex research avenue (Herrando-Rodrigo 2014), which this piece of study will leave dormant for further research.

and overlaps with disciplines and potential readers or consumers—members of medical personnel and non-specialised Internet readers (Tardy 2003). Therefore, the revision of the tenets mentioned above aids this methodology to narrow the scope of analysis towards the conceptualisation of Med-E-Pops as a new combination of form and purpose (Crowston and Williams 2000) that anticipates the potential problems of an audience characterised by its multidisciplinary and its capability of comprehending texts written in English and disseminated on the Internet. Therefore, I eventually turned to Askehave and Nielsen's (2005) approach to electronic genres, which bases its study of genre and genre relations on the exploration of the communicative purpose, the moves and rhetorical strategies of electronic genres. Both the methodology and contextualisation of their study were the most applicable pieces of literature to the interpretation of the data drawn from the Med-E-Pops study conducted in this dissertation. Results from the observation of my preliminary data led me to focus the genre analysis presented here firstly on the contrastive study of the communicative purpose of moves (see discussion of results in section 3.1.3), both of Med-E-RAs and Med-E-Pops moves, since the move structure of Med-E-Pops is a combination of JRV and e-journals constrains. Then, I carried out a contrastive study of the rhetorical strategies used in both genres (see discussion of results in sections 3.2, 3.3, 3.4 and 3.5). This multilevel analysis contributes not only to the study and definition of the Med-E-Pops genre but, above all, to the exploration of voice of Med-E-Pops writers.

### ***2.2.1.2 Approaches to the design of a contrastive genre analysis between Med-E-RAs and Med-E-Pops***

Since further research on the extensively studied RA genre is not intended in this PhD thesis, it is only general aspects related to the interpretation of form and purpose of RAs that will be introduced here. That is, this section revises those aspects of the conventional information structure of Med-E-RAs that may influence Med-E-Pops in order to justify the design of the contrastive genre analysis carried out in section 3.1.

In Med-E-RAs, information is organised in distinct sections that narrate the different steps of a scientific process. The rigid format used by researchers when writing Med-RAs, known as IMRAD, includes the following sections: Introduction, Method (and Patients), Results and Discussion. Nwogu (1997) points out that there is even an internal ordering of the information presented in the different

sections of the RA. There are different types of RAs that scholars write: review articles (in which studies on a specific point of interest in the field are reviewed, providing an overview of the state of the art), theoretical articles (in which scholars present a new model or theory) and empirical articles (in which data are provided to test a particular point of research). With Nwogu (1997), Swales and Feak (2001) also observed that empirical articles usually contain four sections or moves: Introduction, Methods, Results and Discussion. Although these moves may adopt other headings, the four parts can be identified in the Med-E-RAs corpus:

- Introduction (I) The main purpose of the Introduction is to provide the rationale for and background of the paper, moving from general discussion of the topic to the particular issue, question or hypothesis being investigated. A secondary purpose is to attract interest in the topic –and hence readers.
- Methods (M) This describes the methodology employed in varying degrees of detail, focusing on materials, participants (patients), design, and procedures, analyses, etc.
- Results (R) The findings are described accompanied by variable amounts of commentary. They are frequently accompanied by visual representations.
- Discussion (D) This offers an increasingly generalised account of what has been learned in the study. This is usually done through a series of points, at least some of which refer back to statements made in the Introduction.

The most common structure of Med-E-RAs Introductions as Swales (1990) points out in his study of RAs is:

**MOVE 1 ESTABLISHING A TERRITORY**

- Step 1 Claiming centrality  
and/or
- Step 2 Making topic generalisation(s)  
and/or
- Step 3 Reviewing items of previous research

**MOVE 2 ESTABLISHING A NICHE**

- Step 1A Counter-claiming  
or
- Step 1B Indicating a niche  
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

In Med-RAs, Move 1 usually opens with the step *Claiming centrality*. Authors highlight the relevance of the research to be presented at the beginning of their article as a way of contextualizing it and of persuading the reader of its validity. Besides, RAs researchers have also to justify their research framing it in traditional theoretical perspectives. Hence, they have to include in their RAs introductions a research-related literature review. In general, what Med-RAs introductions do is indicate the existence of a research niche. The researchers convey their intention to occupy that research niche with their piece of research and their research question.

The Methods section is explicit about details and procedures. It may contain justifications, explanations, and examples. A great amount of detail tends to be provided especially in empirical Med-RAs. In the case of the Med-E-RAs, all the RAs included in the corpus were empirical and followed the following structure:

**MOVE 1 DESCRIBING DATA-COLLECTION PROCEDURE**

- Step 1 Describing the sample/the participants
- Step 2 Recounting research steps
- Step 3 Justifying research process

**MOVE 2 DESCRIBING DATA-ANALYSIS PROCEDURE**

- Step 1 Recounting data analysis procedure/s
- Step 2 Justifying the data analysis procedure/s
- (Step 3 Previewing results)

The Results section introduces the main results which, extracted from the data, are indicated and commented upon. It is often said that the Results section of RAs should simply report the data that have been collected, that is, it should focus exclusively on these results. Indeed, many of the books and manuals aiming at helping students and scholars to write research papers offer this kind of advice, leaving out evaluation and commentary, which is to be included in the Discussion or Conclusion section. However, this distinction between Results and Discussion is not so clear (see Herrando-Rodrigo *et. al.* 2012). Data commentaries found in this section may actually feature in Results sections. Med-E-RAs have the following elements in the following order:

- locating elements and/or summary statements
- highlighting statements
- stating implications, problems, expectations etc.

Once the visual element (i.e. graph, figure, table, etc.) has been located, the main features they depict are reported. Such statements require good judgement, as they are an opportunity to establish the trends or regularities in the data, distinguish between important findings from less important ones, etc. In addition, this section also highlights some problems with the data. If so, researchers may include commentaries: justifying the methodology, interpreting results, citing agreement with previous studies, admitting difficulties in interpretation, pointing out discrepancies or calling for further research.

The Discussion section goes beyond the results. According to Swales and Feak (2001) it tends to include the following parts:

1. Summary of main findings. Points to consolidate/emphasise your research space (obligatory).
2. Points to indicate the limitations of your study (optional but common).
3. Points to identify useful areas of further research (optional but common).

Having this part of the genre rhetorical structure of the RAs genre as a starting point for the contrastive move analysis, section 3.1.2 will contrast the information structure and communicative purpose of each move in the two genres—Med-E-RAs vs. Med-E-Pops—in order to firstly explore to what extent the genre of Med-E-Pops mirrors the generic conventions of Med-RAs, and secondly to discuss the purpose of such generic adaptation.

## **2.2.2 Approaches for the analysis of the concept of voice in Med-E-Pops**

In the second part of Chapter 3, Discussion of Findings, I will deal with the linguistic features associated with the concept of *voice* in the Med-E-Pops corpus. In my view, the more audible or identifiable the writer's voice is, the more visible this writer may be perceived by the potential readership. To develop a consistent and meaningful interpretation of the lexico-grammatical choices that are here taken to be representations of the voice of the Med-E-Pops writers, a close contrastive analysis between Med-E-RAs and Med-E-Pops was carried out. Thus, this piece of research bases its data interpretation on to



traditional approaches to impersonality in Med-RAs in order to reflect on the textual process of Med-E-RAs adaptation to Med-E-Pops. To do so, I relied on the results obtained by previous linguistic studies on impersonality in the field of applied linguistics, which focus on linguistic features associated with the authors' presence and self-representation in written texts. To my understanding, these studies on impersonality can also be associated with the representation of the writers' voice in written texts. Hence, I interpreted the results from this corpus-driven analysis from the vantage point of previous conclusions reached by Martínez (2001, 2005) and from the different taxonomies she proposes in her study of impersonality in Med-RAs. Her interpretation and approach to authors' impersonality in Med-RAs cast light into the classification and interpretation of my data. Martínez's (2001) approach to medical discourse is based on the implementation of the transitivity system in the study of impersonal constructions as alternatives to the syntactic subject. In accordance with Hodge and Kress (1979), Henderson and Hewings (1990), Halliday and Martin (1993) or Stubbs (1996), Martínez states that these agentless linguistic constructions contribute to the abstraction of the authorship and thus, to impersonality. She adds that these lexico-grammatical choices—interpreted as features of impersonality—that fulfil the syntactic function of subject in Med-RAs can be observed situated in a cline along two dimensions: a syntactic-semantic one (congruence), and a pragmatic one (negotiability). Halliday describes congruence as “typical or unmarked selection of patterns of wordings for the expression of a given meaning” (1994: 341). This scholar labels this pattern of wording as grammatical metaphor (further explained in this section when dealing with active verbs with inanimate subjects—or abstract rhetors). As regards negotiability, Martin, Matthiessen and Painter (1997) stated that it expresses the interpersonal meaning of discourse semantics. One pole of the cline can be observed through the use of finite verbs with a subject. These personal subjects can be realised by means of the personal pronouns *I* or *we*, that not only assume both the responsibility and authorship of the research process but also appear as the least negotiable lexico-grammatical items since the reader can easily infer who is doing what. On the other hand, the function of syntactic subject—explained above—can also be performed by nominalisations. Nominalisations establish distance from the speaker and the content of the text and reduce negotiability. Martínez (2001) illustrates these resources for the representation of participants in relation to congruence and negotiability with the following figure:

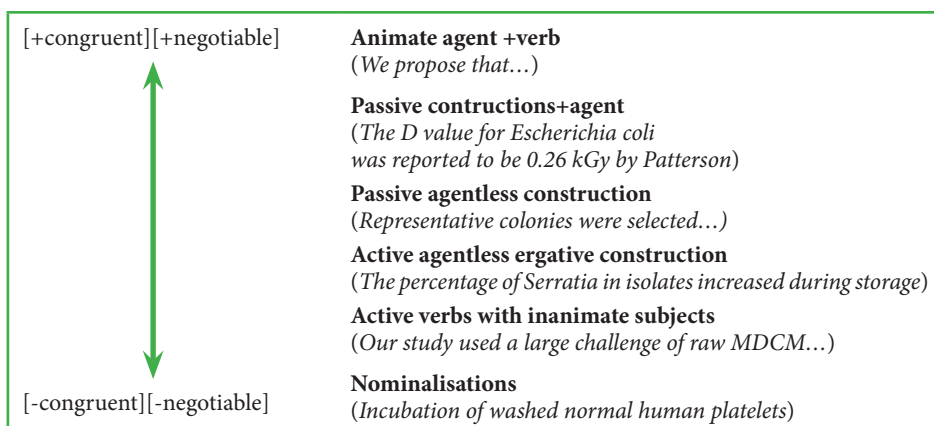


Figure 3. Adaptation of the figure proposed by Martínez (2001: 233) regarding the resources for the representation of participants in relation to congruence and negotiability.

In her cline of lexico-grammatical resources for the representation of participants (displayed above) Martínez associates the syntactic-semantic dimension with a pragmatic dimension of negotiability and non-negotiability. She adds: “The syntactic-semantic distance (Rutherford 1987) that is created through the grammar is in inverse relation to congruence: the less congruent the construction, the more semantic distance between the surface representation and the meaning encoded.” (2001: 234). Halliday and Martin (1993) noted that the interpersonal potential for negotiability is maximal when the agent is explicitly stated in the clause structure. Therefore, the negotiability is minimal when the argument is encoded as a nominal construction.

Martínez’s (2001) cline for the representation of participants and the ensued semantic relations illustrated in figure 3 above has been of paramount importance to interpret my data and for the subsequent measuring and interpretation of Med-E-Pops writers’ voice and the visibility associated to it. Hence, I explored the concept of *voice* in Med-E-Pops writers following the cline represented below, previously introduced in section 1.4.2.3:

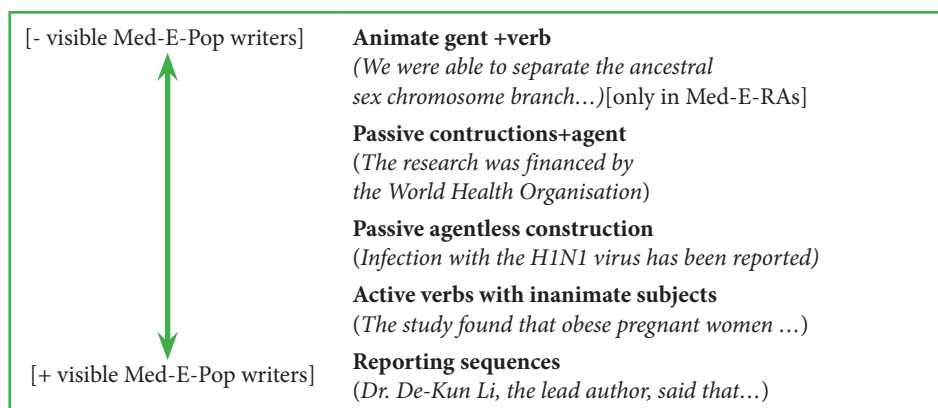


Figure 2. Cline of (in)visibility designed for the interpretation of the corpus.

The data obtained led me to distinguish between the Med-E-RAs authors' voice and their authorial visibility and the Med-E-Pops writers' voice and their visibility. In this type of electronic journalistic reports, the Med-E-RAs author's voice and the Med-E-Pops writer's voice cannot be equally heard. The readers perceive or "hear" either the researchers' voice while reading a Med-E-Pop or the popularisers' voice (see section 1.4.1). Therefore, if the Med-E-RAs author's voice is perceived, the Med-E-Pops writer's voice is silenced. So, in an attempt to measure and grade the visibility or invisibility of Med-E-Pops writers from the perspective of voice, I focused the analysis of my corpus on the four-dimensional cline described above. This cline goes from the total absence of mediation on the part of the Med-E-Pops writer in the research process or research reporting process (i.e. *We [researchers of the Med-E-RA] were able to separate the ancestral sex chromosomes branch*), to a slightly more clear mediation—since Med-E-Pops writers choose how and what to report: This could be interpreted in the sense that Med-E-Pops writers intervene and therefore mediate in a more explicit way (i.e. *Dr. De-Kun Li, the lead author, said that...*).

As a result, I considered that the linguistic features associated with the study of the concept of *voice* in Med-E-Pops could fall into these four categories:

- a) Animate agent followed by active verbs (i.e. *In this study we explore*)
- b) Passive constructions with agent and passive agentless constructions (i.e. *Nurses were randomised to receive surgical masks, etc.*).<sup>57</sup>

57 For the sake of clarity passive constructions with agent and passive agentless constructions are both studied together in section 3.3.

- c) Inanimate subjects followed by active verbs—abstract rhetors (e.g. *This study found that... The results suggest...*, etc.).
- d) Reporting sequences (i.e. “*We did two different types of analysis,*” *the lead researcher of the study, published in the February issue of Archives of Neurology*).

Other linguistic features potentially associated with the study of the concept of *voice* such as modality or discourse connectors have been consciously left out of the analysis, due to their low frequency or even inexistent recurrence found in the Med-E-Pops corpus in a preliminary study (Herrando-Rodrigo 2012). Few tokens were found and no significant repercussion could be deduced. The results obtained in the study of these texts drove their interpretation to a dead-end.

I now turn to explain in depth the methodological approaches used to analyse these lexico-grammatical variables associated with the concept of *voice* in Med-E-Pops.

a) *Animate agent followed by active verbs*

I will first study the recurrence of some morphological units that are used to represent the authors in Med-E-RAs (such as the use of personal pronouns, object pronouns or possessive adjectives) and their subsequent adaptation when Med-E-RAs are transformed into Med-E-Pops. To accomplish this task, Med-E-Pops (as a direct result and conventionalised version of their corresponding Med-E-RAs) are observed closely. Whereas the focus of this dissertation is to reflect on the potential visibility of the popularizations’ writers and therefore the resulting objectivity of the final electronic text published on specialised websites, a contrastive analysis has to be constantly carried out mirroring each pair—Med-E-RAs and Med-E-Pops. This research methodology aims to enable a lucid reflection on the process of Med-E-RAs transformation into Med-E-Pops and also cast light onto the rationale of the lexico-grammatical and rhetorical choices made by the Med-E-Pop writers when adapting the academic medical texts into popularizations.

The formal features that will be studied here, which portray (in)visibility in Med-E-RAs and in their later versions as Med-E-Pops, have been previously approached from traditional angles such as metadiscourse (Hyland 2005a; Lorés-Sanz 2006; Mur-Dueñas 2007b), transitivity system (Halliday and Martin 1993; Martínez 2001, 2005) or rhetorical studies (Luzón-Marco 2000; Vande Kopple 2002; Oliver 2004) among others. Results will be observed regarding the highly conventionalised structure of medical Med-E-RAs published in international journals. The authors are expected to be visible along the Med-E-RAs by

means—among other lexico-grammatical features—of the following linguistic manifestations: the first person plural pronoun *we*, the object pronoun *us* and the possessive adjective *our*, with all the instances used as exclusive elements, that is, referring only to the researchers who write the Med-E-RAs. To explore these linguistic realisations I will adopt the framework of metadiscourse, an advantageous angle when dealing with self-mentions, author's stance (see section 1.4), authors' voice and authors' visibility (section 1.4). Data resulting from the application of metadiscourse aim to illustrate how researchers' visibility can be portrayed in Med-E-RAs and later be transformed in Med-E-Pops.

The term *metadiscourse* was coined by Harris in 1959. He used it to refer to those parts of the text that include secondary information. Harris (1959), Williams (1981), Vande Kopple (1985), Crismore (1984) among others, distinguished primary from secondary discourse. They viewed metadiscourse as secondary elements in texts. As time went by, more elaborated definitions of metadiscourse were formulated (Crismore and Fansworth 1990, among others). Metadiscourse is then conceived as the use of different features which authors use in order to anticipate the readers' needs and expectations. It is one way writers have to help their readers in their decoding and reading process. Hyland (2000: 109) defines metadiscourse as "those aspects of the text which explicitly refer to the organisation of the discourse of the writers' stance towards either its content or the reader". Metadiscursive expressions have been traditionally conceived as a contributing feature to the analysis of textual and interpersonal planes of discourse following Halliday's (1985a) three metafunctions of language. Halliday's analysis of language is based on three planes of meaning (i.e. ideational, interpersonal and textual), which correspond to three metafunctions of language. In other words, metadiscourse can be divided, according to Crismore (1984) into referential or informational features and expressive or attitudinal features. However, this view of metadiscourse has been problematised by Hyland (2005a) and by Hyland and Tse (2004). Hyland argues that all metadiscursive features can be considered interpersonal in that they respond to the type of communicative situation they are embedded in and they also respond to the writers' consideration of their readers' needs and expectations.<sup>58</sup> Hyland and Tse (2004) propose an easier interpretation

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58 Though interactive metadiscourse contributes to organising the text, its use may be also determined by the writers' assessment of their readers. Hyland (2005a: 49) states that "[t]his concerns the writer's awareness of a participating audience and the ways he or she seeks to accommodate its probable knowledge, interests, rhetorical expectations and processing abilities".

of the function and use of metadiscursive features by changing the terminology. They abandon the Hallidayan labels to adopt Thompson's (2001) terminology: *interactive* and *interactional*. It is not only a change in terminology; it also allows an overlapping of functions of language and places the writer-reader relationship at the centre, accounting for the overall use of metadiscourse.<sup>59</sup> In this study, Hyland's (2005a) interactional taxonomy was applied to measure and grade the Med-E-Pops writers' voice. Hyland's (2005a) taxonomy is shown below to illustrate this point:

<b><i>Interactive Metadiscourse</i></b>	
<b>Transitions</b>	<i>in addition; but; thus</i>
<b>Frame markers.</b>	<i>Finally; to conclude</i>
- sequencing	<i>firstly; then</i>
- label stages	<i>in sum; to summarise</i>
- announce goals	<i>I argue here; my purpose</i>
- topic shifts	<i>well; right</i>
<b>Endophoric markers</b>	<i>noted above; in section2</i>
<b>Evidentials</b>	<i>according to X; Z states</i>
<b>Code Glosses</b>	<i>namely; e.g.; such as</i>
<b><i>Interactional Metadiscourse</i></b>	
<b>Hedges</b>	<i>might; perhaps</i>
<b>Boosters</b>	<i>in fact; definitely</i>
<b>Attitude markers</b>	<i>unfortunately, I agree</i>
-attitude verbs	<i>agree; prefer</i>
-stance adverbs	<i>unfortunately; hopefully</i>
-adjectives	<i>appropriate; logical</i>
<b>Engagement markers:</b>	<i>consider; note</i>
-second person (or reader) pronouns	<i>you; your</i>
-questions	
-directives	
-personal asides	
<b>Self-mentions:</b>	<i>we; I; our; me</i>
-inclusive pronouns	

*Hyland's metadiscourse taxonomy (2005a)*

Following Hyland's (2005a) classification, metadiscursive interactional features fall into five categories: hedges, boosters, attitude markers, engagement markers and self-mentions. For the sake of simplicity, this study only introduces the concept of

59 Interactional metadiscourse helps the reader to understand the writers' goals, perspective or stance towards the content of a written text.

*interactional metadiscourse*. Moreover, to interpret the mechanism of how visibility is portrayed in the texts under study, only results regarding self-mentions will be analysed in Med-E-RAs and Med-E-Pops since, to my understanding, they provide evidence of the most personal authorial voice. Only these results are expected to be meaningful in Med-E-Pops in terms of frequency (Herrando-Rodrigo 2010). Dealing with interactional metadiscourse Hyland (2005a: 49) affirms that “[t]his concerns the ways writers conduct interaction by intruding and commenting on their message”.<sup>60</sup> When researchers openly intend to project their voice on their texts they use self-mentions, which refer to the degree of explicit author presence in the text measured by the frequency of use of first-person pronouns and possessive adjectives (*I, me, mine, exclusive we, our, ours*).

b) *Passive constructions*

A considerable amount of literature has been published on the use of passive constructions as devices to create rhetorical impersonality and therefore (in) visibility in EAP genres, as mentioned below. Salager-Meyer’s works, mainly dealing with medical texts, alleged that one of the most recurrent lexicogrammatical features as regards impersonality is the passive construction. Nonetheless, Salager-Meyer (1994, 1998) does not include the passive in her early works dealing with rhetorical conventions up to 2003, when she also starts to consider *nominalisations* as linguistic items that carry out impersonality functions. She (2003) adds that these linguistic items are also an essential part of the academic generic conventions. Lewin (1998) stated that passive constructions

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60 The writer’s aim here is to make his or her views explicit and involve readers. To do so, sometimes writers convey their statements with a plausible reasoning indicating a prudent degree of confidence. When this is the case they use *Hedges*, which are devices such as *possible, might* and *perhaps*, which indicate the writer’s decision to recognise alternative voices and viewpoints. When writers recognise diverse positions they use *Boosters*, which are words such as *clearly* or *obviously* which allow writers to close down alternatives, head off conflicting views and express their certainty in what they say. If what researchers are conveying reaches a personal sphere, writers often show their attitude through the use of *Attitude markers*, which indicate the writer’s affective attitude towards propositions (*unfortunately; I agree; surprisingly*). The presence or absence of explicit author reference is a conscious choice, which models authorial identity. The final aim of any writer is to be read. Thus, writers need to establish a relation with their readers. To carry out this task they use *Engagement Markers*, which are devices that explicitly address readers, and either focus their attention or include them as discourse participants (*consider; note; you can see that*).

could also be used to modify or even hide the writer's stance toward what was being presented in the text. In agreement with the rhetorical approach to passive constructions, Hyland (2000: 94) considers that these constructions are crucial in the search of objectivity that the language of science entails:

Most hedges in these letters, however, were expressed impersonally. Impersonalisation strategies such as the use of passives, nominalisations and objective theme selections have been well-documented in the literature and represent the rhetorical face of science (e.g. Gosden 1993, Halliday 1988, Swales 1990). Together these features help to reinforce the predominant view of science as an impersonal, inductive enterprise. They minimize the role of socially contingent factors in research and contribute to the ideological representation that "truth" is discovered, not constructed.

As mentioned above, passive constructions have been studied as a trace of impersonality in RAs and moreover have lately been approached from a metadiscursive angle.<sup>61</sup> Metadiscursive methodology will not be completely applied in this piece of research since it cannot fully be associated with the study of the concept of *writers' voice* in Med-E-Pops. Therefore, I will need to complement it with other methodological frameworks. Crompton (1997: 286), for instance, already suggested delimiting this broad angle of rhetorical conventions—for instance the consideration of passive constructions as hedges:

It seems that there is a danger of *hedge* being used as a catch-all term for an assortment of features noticed in academic writing. Clearly, the use of impersonal constructions, passivizations, lexis expressing personal involvement, other politeness strategies, and factivity in reporting/evaluating the claims of other researches are important issues in academic writing; these all seem worthy of further research to enhance teaching of the subject. However, the restriction of *hedge* to designate language avoiding commitment, a use which corresponds closely, as we have seen, with the ordinary use of the word, seems desirable and feasible, both theoretically and pedagogically. Equipped with such a functional definition, it should be easier, both for teachers and for students, to identify and talk about the major kinds of hedges to be found in the target discourse.

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61 For instance Fortanet, Palmer and Posteguillo (2001: 243) affirm that: "[i]t is our understanding that hedging devices help to express the author's attitude towards their research, as well as towards their potential readers. Therefore we should be especially cautious with a wide number of linguistic aspects, which can become hedging devices, such as the use of passive voice, impersonal sentences, if-clauses, and some other rhetorical features".



Thus, enlightened by previous studies, I will narrow the scope of this analysis to the exploration of passive constructions as the second lexico-grammatical variable for the observation of the concept of *voice* in Med-E-Pops. Needless to say some scholars think that its use is due to a lack of compromise. That is, RAs authors refuse to take full responsibility for what is being conveyed just in case another piece of research soon shows opposite results. Another interpretation is that RAs authors willingly establish certain distance from what is conveyed. They try to present the research and not who did it. Removing this latent human intervention the research is displayed as more neutral, more objective and reliable. Whatever the reason for the use of passive constructions in Med-E-RAs may be, it cannot be overlooked that these constructions are distinctively specific to the genre of RAs. Thus, supported by literature and by the data found, an analysis of the passive tokens in RAs was considered to be the second point for an in-depth study on authorial visibility in Med-E-Pops (see figure 2 above).

An additional observation will be added regarding what type of research process or verbal act follow the passive subjects in the agentless passive constructions. Although there is no general agreement as regards a common nomenclature to cover what has traditionally been referred to as predicator (Halliday 1985; Greenbaum and Quirk 1990; Biber *et al.* 1999; Huddleston and Pullum 2005), this section follows Downing and Locke's (1992, 2006) approach to the expression of patterns of experiences in an attempt to cast light onto the issue of whose visibility is projected in Med-E-Pops. That is, the exploration of the verbal phrases in passive constructions is expected to confirm whose research experience, and therefore whose visibility, is being portrayed in the Med-E-Pops.

Downing and Locke (2002) state that a clause is a pattern of experience; therefore processes, circumstances and participants are involved in these experiences. The patterns found in the texts under study express: (i) situations—with situation types and processes; and (ii) processes of doing and causing; one-participant processes—containing a subject which acts or is acted upon. Another interesting concept Downing and Locke (2002) reflect upon is *grammatical metaphor* that can undoubtedly be the syntactic subject of a verbal process.<sup>62</sup> The

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62 In agreement with Downing and Locke it is assumed here that any state of affairs can be conveyed in more than one way. Thus a lexical metaphor can easily be transferred into a grammatical metaphor and the other way around. This can be exemplified with their own instances: *We walked in the evening along the river to Henley* may be expressed as *Our evening walk along the river took us to Henley*. In the Med-E-RAs corpus, examples

concept of *grammatical metaphor* has been widely studied in medical English (see for instance Guillén-Galve 1998, 2001; Luzón-Marco 2000; Oliver 2004, etc.) but it has consciously been underexplored in this study due to the insignificant number of occurrences found in previous studies regarding the Med-E-Pops corpus (Herrando-Rodrigo 2012).

It seems sensible that, for the sake of clarity, in this piece of research I shall focus on the proposal of a systemic functional framework presented above as regards processes, in order to observe what types of verbs follow the agents in Med-E-Pops. The term *process* is used in SFG to refer to verbal acts that convey a state, an action, an event, a transition or a change of state, a climatic phenomenon, a process of sensing, saying, behaving or simply existing. Only (i) material processes, or processes of doing and causing, (ii) cognition or mental processes, and (iii) relational process are usually found in medical discourse (Herrando-Rodrigo 2010). Material processes express an action or an activity, which is typically carried out by a *doer* or *agent*. By *agent* it is meant “any entity that is capable of operating on itself or others, to bring about some changes in the location or properties of itself or others” (Downing and Locke 2002: 114). A causative process depends on the verb used. The agent involved brings about a change of state in what Downing and Locke call “affected participant” or other linguists traditionally refer to as direct object. The resulting state is labelled with the term *resulting attribute*. This distinction between material and cognitive processes will be applied in this dissertation to clarify who the agent is that carries out a material or cognitive process. So, an analysis of these verbal patterns used by Med-E-Pops writers when reporting the Med-E-RAs findings (see section 3.3) is also expected to enlighten whose visibility is being allowed in the Med-E-Pops.

c) *Inanimate subjects followed by active verbs (or abstract rhetors)*

The lexico-grammatical feature that follows the vector of the authorial visibility in this analysis is the inanimate subject or abstract rhetor. To justify the foundation of the analysis of inanimate subjects followed by active verbs,<sup>63</sup> I go back to the theoretical scaffolding of rhetorical attenuation and the system of transitivity in order to interpret the results obtained from the study of the

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such as *alcohol dehydrogenase*, *ethanotic fermentation* or *homophile based perception* can be constantly found.

63 To refer to verbs with no human subject either the nomenclature *inanimate subjects followed by active verbs (or abstract rhetors)* is used along the present dissertation.

authorial visibility in Med-E-Pops. It seems unquestionable that one of the characteristics of scientific discourse (as has been stated in section 1.2.3) is the persistent use of rhetorical conventions. Among other researches (Prince *et al.* 1982; Salager-Meyer 1994; Hyland 1998, 2002a,b or Fortanet *et al.* 2001), Varttala (1999: 178) reflects on the need to use rhetorical features in medical discourse to introduce explicit authorial distance:

“[t]he expression of tentativeness and possibility (Hyland 1996: 433), in the form of modal expressions, is a common feature in academic discourse (Crismore & Farnsworth 1990). It is frequently claimed that instead of saying ‘I know’, members of the academia should rather *assume* or *suggest* when they address other scholars. Similarly, in the place of saying how things *are*, one should sometimes preferably say how things *might* be, or how things perhaps *are*. Hedging has been linked to highest-level peer communication such as professional specialist-to-specialist research articles (Fahnestock 1986; Hyland 1994, 1996) and the use of hedges is thought to be particularly characteristic of discourse between medical specialists (Prince *et al.* 1982; Salager-Meyer 1994)”

The use of certain rhetorical conventions in RAs allows the authors to be present in their texts in a more or less evident way according to their communicative purpose, their audience and the context. Linguistic items such as modal verbs, probability adjectives and adverbs or epistemic verbs are used in RAs due to the fact that these linguistic features allow scientists to present their knowledge cautiously and introduce claims (Salager-Meyer 1994).<sup>64</sup> With these linguistic features authors encourage dialogue with their audience and facilitate discussion (Hyland 1998). From a pragmatic perspective authors project their personal doubts and involvement. Drawn from previous studies based on the rhetorical conventions in English, a syntactical approach is taken here to observe how and why Med-E-RAs authors and Med-E-Pops writers *depersonalise* their own texts. The linguistic items under study, which help us observe how authors hide their attitude towards the content (Lewin 1998) and how authors fulfil academic conventions to seem

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64 These are widely known as *shields*, attending to a pragmatic categorization. At a linguistic level as well, adjectives and adverbs have been explored in previous literature to observe the authors’ avoidance of personal involvement and the impossibility of reaching absolute accuracy (Salager-Meyers 1994). In pragmatics shields have been labelled as *approximators*. The use of first person markers has also been studied since they emphasise the interpersonal dimension of the authors, their texts and the relation they aim to establish with their potential readership.

more precise and more scientific (Salager-Meyer *et al.* 2003), are agentless passive structures and nominalisations. Therefore, a study of these lexico-grammatical variables will be conducted here. These agentless structures have been selected for their semantic association with the creation of authorial (in)visibility.

For the purposes of this dissertation I think the study of abstract rhetors can be more profitable than the study of nominalisations. Nominalisations have been described by Halliday as “the most powerful resource for creating grammatical metaphor” (1994: 352). Many insightful studies have been conducted by scholars such as Halliday 1985; Downing and Locke 1992 (2006); Guillén-Galve 1996, 2004; Hyland 1998 or Muñoz 1999, dealing with nominalisations as structures that pack information from verbal process. Downing and Locke (1992, 2006) describe this linguistic phenomenon as a lexical metaphor transferred into a grammatical metaphor according to the speakers’ or writers’ purpose. Muñoz (1999) describes the term *grammatical metaphor* as a verbal process substituted by a nominal group. She says that this process is especially recurrent in scientific discourse. Guillén-Galve (2004) goes further and distinguishes two types of grammatical metaphors: the active and the passive grammatical metaphor. The difference lies in the grade of creativity or originality. He states the following:

What distinguishes active from passive metaphors is basically whether the metaphorical noun, adjective or verb has been created inside the text, or part of the vocabulary of medicine. Active metaphors are creative metaphors in the sense that they exploit the semiotic space covered in the transference of the representation of a given meaning from the verb (or adjective or adverb) to noun (or other verb classes). It is this type of metaphor that leaves the writer some room for interpersonal manoeuvre (2004: 84)

Thompson (1996) finds drawbacks in the recurrent use of grammatical metaphors. He admits its utility but he also points out the lack of writer-reader interaction that may cause the readers’ refusal. This seems to be one of the reasons why Med-E-Pops do not use them:

The non-negotiability associated with nominalizations can clearly be a powerful weapon in cases where the speaker or writer wishes, for whatever reason, to avoid negotiation, with its possible outcome or rejection. (1996: 172)

In agreement with Hyland (1998), I understand that abstract rhetors nominalise a personal projection and suggest that the situation described is independent of human agency. Ferrari (2003) highlights the use of these abstract rhetors as an

alternative to the use of passive constructions as a depersonalisation strategy. She states that the use of active verbs with inanimate subjects suggest that rhetorical processes can be fulfilled without human intervention. According to her study, the use of abstract rhetors contributes to the depersonalisation of discourse, displaying data as the source of any epistemic judgement. In her study of verbs used in English by medical researchers to make comments about their own RAs, Luzón-Marco (2000: 138) claims that the following:

These verbs act as a link between an observation or finding and its meaning. In this way they establish a kind of cause-consequence relation between the experiment and its meaning. They only have this relational function when the subject is non-human (Halliday 1988: 174). This non-human subject helps to convey the impression of causality and non-intervention of the researcher. Verbs such as *indicate*, *suggest* or *show* are used to explain and represent physical phenomena, by establishing an internal relationship of cause (i.e. *a* causes me to think *b*): happening *a* is the proof of happening *b* (Halliday, 1998: 175)

She also adds that the use of these verbs with non-human subjects is a way to present implications of the study.

Inspired by previous studies (Groom 2000 or Bondi 2009 to name a few), the formal analysis in this piece of work will be based on the study of the following abstract rhetors: *study*, *results*, *findings*, *analysis* and *research*. This choice is supported by previous literature (Herrando-Rodrigo 2010). Data analysis of these abstract rhetors can also be used to study who the responsible entity might be for a given proposition. This study does not follow Groom's 2000 or Bondi's 2009 approaches as regards the concept of *attribution* since in the corpus under study who-says-what and with what communicative purpose remain clear.<sup>65</sup> As for the question of *position* (authoritative persona), it is very motivating but it has been consciously left out of this study for future research.

#### *d) Reporting sequences*

Reporting and quoting in the scientific discourse has been approached by many insightful angles. Hunston (1993), for instance, studies aspects of ideology in scientific texts analysing the concept of *evaluation*, that is, "the writer's attitude

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65 The concept of *attribution* in Linguistics draws back to Fritz Heider (1958) and the interpersonal relations of Social Psychology.

to the value of an entity in the text” (1993: 58). This is a crucial aspect in the association of reporting in Med-E-Pops and the Med-E-Pops writers’ visibility since this dissertation understands reporting in Med-E-Pops as the most visible trace of their visibility. Med-E-Pops writers seem to be free to choose who, what and how to report from the Med-E-RA. There are other studies such as Thomas and Hawes’ (1994) that explore the use of reporting verbs in reporting statements and citations in medical journal articles and their role in the discourse. Meyers (1999, 2004) also studies the functions of reported speech in scientific discourse. These studies, together with the other approaches to reporting such as Thompson and Ye (1991), Shaw (1992), Thompson (1996, 2004), Charles (2004) and John (2005) are a landmark to portray a potential discursal pattern that may answer the questions posed after a preliminary study of my Med-E-Pops corpus (Herrando-Rodrigo 2012): “Whose voice has being brought into the Med-E-Pop?”, “Who is visible here?” and “Why are these voices present in the Med-E-Pop?”.

The analyses carried out in this piece of research will have RA generic and rhetorical conventions as a starting point in order to empirically explore Med-E-Pops as Med-E-RAs adaptation. Needless to say both genres differ in many aspects but the most peculiar one from the point of view of the writers’ visibility is the use of reporting sequences. *Reporting* in RAs contextualises the research carried out by referring to other scholars’ work. In addition, researchers also manage to create their research space by referring to other people. As Swales and Feak (2001) maintain, there are different ways of citing someone’s work in academic writing. For instance emphasis can be placed on the originators of the idea, attention can be given to the idea rather than to who postulates it by using certain reporting verbs with direct and indirect reporting sequences or different ways of citing. Some linguistic choices may denote a different degree of authors’ qualification, distance or commitment and therefore visibility. However, the rhetorical structure of RAs demands the existence of a research background or literature review that establishes the context of the paper and motivates the research (Hyland 2000). As commented above, in this literature review different citation patterns are possible and even the choice of tense together with other lexico-grammatical features introduce the research reported as a starting point to indicate a research niche or the occupation of the niche or the statement of the purpose of the RA. This is not the case of Med-E-Pops. The Med-E-Pops under study are not expected to introduce a literature review. Therefore, I will attempt to conclude whether the use of reporting in Med-E-RAs and Med-E-Pops responds to similar or different communicative purposes.

Since Med-E-Pops can be conceived as electronic JRVs (Nwogu 1991), these popular texts are expected to use reporting sequences, as Giunchi 2002 also states in her study of WAs.

I consider that the degree of the writers' visibility can be associated with the use of reporting sequences in Med-E-Pops because the purpose of the Med-E-Pops genre under study is to refer to the researchers' scientific experience. Therefore I inferred that it would be the voice of *others*, and not the voice of Med-E-Pops writers what might be brought to Med-E-Pops. Thus, what this dissertation intends by exploring reporting sequences in Med-E-Pops is:

- 1) to discern whose voice is brought to the Med-E-Pops and with what purpose,
- 2) to study whether Med-E-Pops writers are visible in their texts by evaluating the research reported by means of the use of certain reporting verbs,
- 3) if so, to decide whether Med-E-Pops writers' attitude towards the research reported would reveal different degrees of Med-E-Pops writers (in)visibility, and
- 4) to associate the manifestation of the Med-E-Pops writers' visibility with the role Med-E-Pops writers may acquire when reporting certain chunks of information rather than others (either to reinforce strong points from the Med-E-RAs research or to mitigate Med-E-RAs weaknesses).

Hence, the first objective of section 3.5 will be to investigate if other voices are present in the Med-E-Pops and for what aims. To do so I will first apply Fløttum, Dahl and Kinn's (2006: 215) work on academic voices. In their study of person manifestation these authors not only cover the concept of *person manifestation* as *author* or *self-manifestation*. They widen this concept stating that the concept of *person manifestation* covers reference to three persons (first, second and third). Therefore, a distinction is made between *self*—the dimension presence corresponds to the author—, *self & other*—the dimension presence is manifested in the interaction between the author as first person and the reader as second person—, and *other*—the dimension presence of the third person is manifested by the presence of researchers other than the author(s). According to Fløttum, Dahl and Kinn (2006), this last dimension also refers to a second person through additional references to the reader(s). However, in this piece of research I base the data interpretation towards on the presence of *others* in Med-E-Pops. It could be said that the voices of these *others* or external researchers are reflected in a multivoiced communicative situation of polyphony. To deal with polyphony

Fløttum, Dahl and Kinn turned to ScaPoLine theory inspired in Bakhtinian ideas of dialogism and polyphony—later developed by Thompson (1996) or Bondi and Silver (2004)—because it enables to study the multitudinal interaction of voices in depth. While Bakhtin (1981) believes that any utterance undergoes a double influence, which might be called interdiscoursal and interlocutive, these authors state that utterances enter into interdiscoursal resonance with what has been said, or also anticipate the reactions of a real or potential reader/hearer. What the ScaPoLine adds to this approach is the idea that the relation between the speaker's voice and the others' voice is hierarchical: for Fløttum, Dahl and Kinn (2006) the speaker has the dominant voice. On the other hand, the Bakhtinian conception of polyphony considers the different voices as independent. This piece of research will try to find out whether there is a relation of equality between the narrator, in this case the Med-E-Pop writer, and the other voices. The relevance of the concept of *polyphony* in this study lies on the assumption that the Med-E-Pop writer may set up a polyphonic game signalling the presence of both his or her voice and the voices of others. Different voices are explicitly given the floor by distinctive marks that signal the existence of polyphony. The writer then creates an interplay of different voices or viewpoints that may search diverse communicative purposes—i.e. supporting research, conveying different opinions on the ambiguity of certain findings, etc.

The second objective of the exploration of reporting is to study whether Med-E-Pops writers are visible in their texts by adding any personal comment or assessment of the research reported with the use of reporting verbs. I also intend to explore the Med-E-Pops writers' attitudes, if any, towards the research reported. Thus, I will analyse all the reporting verbs used in my Med-E-Pops corpus to explore whether these verbs show any trace of writers' evaluation and, consequently, traces of their own voice and its ensued visibility. The degree of the Med-E-Pops writers' (in)visibility may contribute to the interpretation of the commitment or detachment of Med-E-Pops writers to the Med-E-RA research reported. This will be analysed and therefore interpreted not only in terms of the concept of Med-E-Pops *writers' voice* but also in terms of the Med-E-Pops genre as a whole.

The question of how to develop a taxonomy for a potential patterning will be approached from Systemic Functional Linguistics or SFL (Downing and Locke 1992/2006; Halliday and Martin 1993; Eggins 1994 or Halliday 1994) in order to reach the third objective of section 3.5. In addition, the use of reporting by means of direct and indirect speech will be analysed from a SFL and the



system of transitivity approaches to try to infer preliminary conclusions about the discursive effect of the reporting verbs used in Med-E-Pops. The system of transitivity focuses on the way in which clauses are organised to express experimental meanings. Halliday affirms that “the transitivity system construes the world of experiences into a manageable set of process types” (1994: 106). As Martínez (2001) summarised in her study of experimental research articles, there are three forms of representation of experience: the *outer* experience, represented as actions or events; the *inner* experience, represented as reactions and reflection on the outer experience; and *generalisation*, represented as a relationship of one form of experience or another. These forms of representation are primarily realised in material (*calculate, conduct, measure, use*), mental (*believe, find, observe*) and relational (*appear, be, result*) processes; secondarily in behavioural (*gaze, look at, smile*), verbal (*argue, describe, explain*) and existential (*be, appear, exist*) processes. Hence, I will analyse the verbal tokens to explore their semantic implications.

Finally, I intend to associate the concept of the Med-E-Pops *writers’ visibility* with the role Med-E-Pops writers adopt when reporting certain chunks of information rather than others—either to reinforce strong points from the Med-E-RAs research or to mitigate Med-E-RAs weaknesses.

Texts are goal-oriented, interactive, and dynamic (Sinclair 1985) and therefore interpretable in sociological terms (Halliday 1978, Myers 1989a). To assess the potential intention, role or purpose of reporting I will turn to the concept of *evaluation* at the discourse level rather than at the grammatical level. By so doing, I aim to examine the writers’ view of the status of the information in their texts. This will cast light into the writers’ visibility, that is, if they somehow show any personal opinion about whose voice is being reported, what is being reported and why. As regards the evaluation of citations Tadros (1985) points out that citing another author predicts an evaluation of that author. The writer is expected as well to justify mentioning the author in that context. Writers cite or quote another author because they have a purpose in constructing their text using certain information in a certain way. Thompson and Ye’s (1991) taxonomy deals with the idea of reporting levels or reporting layers that writers may establish when reporting other studies. According to these researchers, writers may project two attitudes when reporting: writers can *denote* (indicate who says what) and *evaluate* (what has been said by the authors of the text or quoted). This analysis will turn to this approach to both explore the potential semantic implications of the reporting verbs used and to study the role of the Med-E-Pops writers when

quoting some chunks of information rather than others. Hence, the information reported will be analysed to check whether it reinforces the strong points of the Med-E-RAs research or mitigates weak points. This practice can therefore be interpreted as a visible manifestation of the Med-E-Pops writers' presence in the Med-E-Pops.

As has already been outlined in the Introduction, results will be discussed in different subsections due to the different levels of analysis attempted in this piece of research. First (section 3.1), I will discuss the findings referring to the generic relations between Med-E-RAs and Med-E-Pops genres. This first section also aims to give a close definition to this newly born electronic genre (Med-E-Pops genre) basing its discussion on the textual evidence provided by the analysis. The following subsections (3.2, 3.3, 3.4 and 3.5) will deal with the lexico-grammatical features which are here associated with the potential realisations of the Med-E-Pops writers' voice in Med-E-Pops. Each of these sections will deal with one lexico-grammatical feature in order to study in-depth both their relation with the Med-E-Pops writers' visibility and the constraints that the generic conventions of this genre impose on the lexico-grammar.



## CHAPTER 3

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### DISCUSSION OF FINDINGS

As mentioned in the introduction of this dissertation, the nature of the data found in this study indicated that for the sake of clarity the interpretation of results should be introduced and discussed straight away. Therefore, this dissertation does not include a chapter showing the results of the current study and a separate chapter discussing the findings. The close observation of these findings leads me directly to their discussion, since for readers who are not familiar with the concept of voice in applied linguistics it might be difficult to elucidate the interpretation of results from the analysis in isolation. Moreover, as the ultimate aim of this analysis of genre and rhetorical strategies is to explore the concept of voice with reference to Med-E-Pops writers, I decided to guide the reader along this not-so-common, yet solid, process of data research and interpretation by choosing a chapter structure capable of showing my data interpretation in a clear, empirical and direct way.<sup>66</sup>

The starting point for this discussion of findings is the need to contextualise the concept of voice with genre studies and the different interpretations of voice realisations of Med-E-Pops writers. Therefore, it was necessary for the information structure of every section in this chapter to draw on previous studies of the textual and linguistic variables analysed here in order to interpret the Med-E-Pops findings, contrasting Med-E-RAs with Med-E-Pops—the former being both the source Med-E-Pops drawn upon and the established and accepted genre of reference in applied linguistics, since Med-E-RAs also present the scientific journal article of the original research type.

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66 In fact, whereas in the field of hard science RAs and PhD structures follow the canonical textual conventions, the field of arts and more specifically our linguistics discipline seems to be adopting this trend not only in PhDs but also in different academic settings (see for instance Ashmore 1989, Phan Le Ha 2009; Herrando-Rodrigo *et al.* 2012).

Generally, as mentioned above, this chapter has a dual objective; to discuss the findings related to the contextualisation of the genre of Med-E-Pops and to discuss the findings concerning the concept of the voice of writers in this Med-E-Pops context. In this chapter I first present the discussion of findings obtained from the generic contrastive study of Med-E-RAs and Med-E-Pops. As mentioned in Chapter 2, this analysis helped me to initially observe the genre relations of both genres and therefore the implications of these relations in the definition of the genre under study, labelled here as Med-E-Pops.<sup>67</sup> The second objective of this section is to present the discussion of findings obtained from the study of the concept of voice. The concept of voice of Med-E-Pops writers is studied in this dissertation from one of the main standpoints that forms the traditional genre model of analysis. That is, the rhetorical features that characterise the Med-E-Pops genre—approached from several angles such as Martínez’s 2001 impersonality approach to Hyland’s 2005 authorial voice study, among others—are interpreted in this dissertation regarding the concept of the voice of writers and its virtual invisibility. Finally, all these chapter sections, which comprise the first part (3.1) dealing with the analysis of the Med-E-Pops genre and the second part (sections 3.2, 3.3, 3.4 and 3.5) dealing with the analysis of the voice of writers in Med-E-Pops, close with the conclusions of the corresponding section. These conclusions suggest that this piece of research, which was initially conceived mainly for the study of the concept of writers’ voice, has gone from genre to the concept of voice and back to genre.

### **3.1. CONTRASTING Med-E-RAs AND Med-E-Pops GENRES**

As Corona (2008: 22) says in her study on the genre of obituaries:

Now, the crucial question for this thesis is: What kind of genre theory serves the present work best, according to its ultimate objectives? Or, as Swales (2004: 3) argues, “Is there a single one-size-fits-all or ‘best’ genre theory for all circumstances?”

In section 3.1.1 I transfer the main ideas that may be necessary to describe Med-E-RAs and Med-E-Pops genre relations from traditional theoretical approaches to

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67 This genre-relations exploration cast light onto the applicable genre model for the contrastive analysis of Med-E-RAs and Med-E-Pops and onto this dissertation’s conceptualisation of the Med-E-Pops genre.

the study of genre relations. I also review the genre-theoretical model of analysis that is applicable and valid for the texts under study in an attempt to explain what this dissertation understands as Med-E-Pops genre. The revision of previous studies applied to RAs helps to interpret the results from the contrastive study between Med-E-RAs genre and Med-E-Pops genre since the latter genre seems to be an adaptation of Med-RAs genre addressed to a lay audience and disseminated on specialised web pages. Therefore, section 3.1.2 shows how Med-E-Pops mirror their Med-E-RAs counterparts by using the same lexico-grammatical features and similar textual conventions and adapting the research content with scientific rigour, contrary to some criticism on scientific popularizations as explained in section 1.3. Section 3.1.3 closes this first part of discussion of the findings by concluding, among other things, that to build trust around Med-E-Pops and to promote medical research among lay people, Med-E-Pops reproduce a highly conventionalised information structure that makes the reader trust the text (*c.f.* Funkhouser *et al.* 1970; Farago 1976; Jones 1978; Nwogu 1991; Kuteeva and McGrath 2012).

### **3.1.1. Previous studies on genre relations**

After the analysis of the texts that make up the Med-E-Pops corpus, it should be noted that Swales' (2004) conceptualisation of generic constellations might have no direct application to the definition of the generic relation between Med-E-Pops and Med-E-RAs, since in the medical field Med-E-Pops are not accepted vehicles for knowledge dissemination—as the results from the survey-based study carried out among practitioners and shown in Chapter 2 point out (Herrando-Rodrigo 2014). Considering Med-E-RAs and Med-E-Pops as members of a medical genre constellation may lack accuracy according to Bhatia (2004), since Swales (2004) fails to consider the fact that some members with certain seniority, mastery or with sufficient genre knowledge can maximise genres for their own benefits, thereby creating generic hybridity. Although Med-E-Pops could be considered as blurred or hybrid reformulations of Med-E-RAs (Herrando-Rodrigo 2012), Med-E-Pops should not be understood as a generic product of senior researchers who maximise this genre for their own benefit. On the contrary, Med-E-Pops are adaptations or reformulations of former Med-E-RAs that disseminate scientific knowledge to a mainly non-specialised audience. Med-E-Pops are popular medical texts written by “entrepreneurs of science” (Myers 1986 and Adams-Smith 1987) that linguistically mediate between Med-E-RAs and the lay audience

or recipients (see section 1.3.1). These Med-E-Pops writers seek neutrality and objectivity by using an information structure that meets the Internet consumers' expectations. Besides, Med-E-Pops writers adapt the Med-E-RAs content with scientific rigour, and above all, avoiding the projection of their own voice as knowledge mediators. To get this communicative purpose, Med-E-Pops writers reintroduce the voice of Med-E-RAs researchers into Med-E-Pops by naming the researchers and by including reporting sequences (see section 3.5). In addition, Med-E-Pops writers hide themselves behind impersonal lexico-grammatical constructions that enhance the audibility of the Med-E-RA researchers' voices and not that of the Med-E-Pops writers' (see sections 3.2, 3.3 and 3.4). Although this previously mentioned idea is the core interest of this dissertation, and is therefore, further developed in the second part of this chapter. I introduce an example below to briefly illustrate this idea:

(7) June 29, 2009- The same bee and other insect venom shots that doctors use to prevent deadly systemic reactions to insect stings can also tone down large local allergic reactions that, while not dangerous, can be painful and inconvenient, **a Johns Hopkins study shows. Results of the study are published** in the June 2009 *Journal of Allergy and Clinical Immunology*. [...] **“We just didn't know if venom therapy would work or cause problems for these patients,” says David Golden, M.D., an associate professor of medicine at the Johns Hopkins University School of Medicine.** [Med-E-Pop18].

As mentioned before (section 1.2.2), Bhatia's (2004) conception of *colonies* implies that some genres have evolved and have begun to be exploited by expert members. They have come to be aligned to other genres, forming a colony of paramount importance and interest regarding communicative purpose. Bhatia's ideas on genre colonies and generic integrity cast light onto this dissertation's understanding of the Med-E-Pops genre. Therefore, the Med-E-Pops genre should be understood as a socially constructed group of written texts whose communicative purpose is to answer Internet readers' medical doubts about specific health issues related to current research which is being published almost simultaneously in specialised journals—Med-RAs journals. To respond to Internet readership medical demands, e-journal writers adapt Med-RAs into shorter electronic texts whose form, content and functions to some extent resemble the formality of Med-RAs in order to build the readers' trust regarding both the Med-RA research and the Med-E-Pop text. Therefore, it could be claimed that the Med-E-Pops genre attempts to be another member of the medical genre colony. In addition to this, Bazerman (1994) introduces the concepts of genre system and genre set, later revised by Devitt (1991,

1994), that also cast light upon the interpretation of the genre relations contrastive data and the resulting definition of Med-E-Pops. With this research I also believe that any text is best understood within the context of other texts. However, the professional genre relations that occurred among certain genres are not reproduced in Med-RAs and Med-E-Pops genre relations since Med-E-RAs and Med-E-Pops are not a set of genres interacting to accomplish a specific objective or professional task (Devitt 1991, 1994).

Orlikowski and Yates' (1994) conceptualisation of genre repertoire does not define Med-E-RA and Med-E-Pop genre relations either. Still, these researchers pose questions which seem key for the conceptualisation of the Med-E-Pop genre as regards the acceptance of its new establishment as the subject of study in applied linguistics: "Given on-going variations to existing genres, when can it be said that a new genre has emerged?". Orlikowski and Yates (1994: 545) suggest that in practice, it is impossible to define an exact point. This approach to the study of genre relations like socially recognised types of communicative action suggests that variants are communicative actions still recognisable as instances of the old genre, while a new genre can be said to have emerged when a new conjunction of form and purpose becomes recognised by its community as different from the old one. Orlikowski and Yates' (1994) findings helped this dissertation from the early corpus gathering stage. That is, the reason for considering doctors' opinions in the survey-based approach (shown in Chapter 2) as main informants—not only for the compilation of the corpus but also for the validation of this study—is that doctors, and not patients, can recognise the new conjunction of form and purpose of this new Med-E-Pops genre as different from the old genre (Med-RAs). Moreover, the doctors selected as informants for this study are producers of Med-RAs, consumers of Med-E-Pops and therefore members of a discourse community that deals with other medical personnel, patients and future doctors (see Chapter 2). Therefore, such recognition may be explicitly articulated within the community or be implicit in members' practices. Moreover, if a community's genre repertoire indicates its established communicative practices, it is also to be expected that the set of genres from a specific repertoire will share ideologies and communicative behaviours. According to Orlikowski and Yates (1994) a community genre repertoire is initially established when members of a new community simply start enacting genres they used as members of another community. Unlike Med-E-Pops, these genre repertoires will then be affected by members' prior experiences in similar situations and expectations based on knowledge of genre rules. There is, therefore, no evidence that may suggest that Med-E-RAs and Med-E-Pops are members of the same genre repertoire.



Another of the genre relations reviewed in this analysis for the eventual definition of Med-E-RAs and Med-E-Pops genre relations was Tardy's (2003) conceptualisation of genre relations as networks. Her approach, however, does not describe the potential generic relations between Med-E-RAs and Med-E-Pops since their relations are not based on the interaction of consequent compulsory bureaucratic steps given to achieve a goal.

Although in the following section I have analysed Med-E-RAs generic conventions, the fact that these Med-E-RAs were early versions of the Med-RAs later published on paper was just a matter of availability. In other words, if members of the discipline, subscribed practitioners or authorised users (members of the university community with research access) had access to the journal, they could read the Med-RA in a shorter span of time, that is, before it became published. Therefore, the medium, the Internet, does not affect the generic conventions of Med-RAs in their earlier versions as Med-E-RAs in any way. Therefore, although this dissertation does not intend to contribute to the development of a systematic characterisation of web-mediated genres (as mentioned in section 1.2.5), this study cannot fail to consider the intrinsic influence of the digital or electronic background of Med-E-Pops. Crowston and Williams (2000) examine the phenomenon of electronic genres and their genre relations in order to observe whether some genres are adapted to take advantage of the linking and interactivity of the new medium of communication or whether they are emergent genres of communication. After a period of coexistence, the new combination of form and purpose may become generally recognised and named as a separate genre. Needless to say, genres such as Med-E-Pops may be accepted in different communities at varying degrees. The emergence of new electronic genres would be one sign of the formation of a new community with new communicative practices.

Having explained in this section that the genre relations between Med-E-RAs and Med-E-Pops could be defined by considering both genres as members of the medical colony—and not as constituents of a genre constellation, repertoire, network or set of genres—Swales' (2004: 3) reflection about a single one-size-fits-all theory for approaching genres should be examined. This section has attempted to explain the central importance of studying different theoretical approaches to genre relations in order to understand and interpret the context in which Med-E-Pops emerge. One of the most significant findings to emerge from this section is that the Med-E-Pops genre is socially constructed but not affected by the social interaction of its discourse community members, since there is no interaction between all the members of the discourse community. In

other words, Med-E-Pop reporters are the writers who mediate between Med-E-RAs and Med-E-Pops for a worldwide audience. This fact allows these writers to create dynamic texts since readers can click on hyperlinks to Med-E-RAs abstracts or researchers' institutions.<sup>68</sup> However, unlike other genre relations, the interaction between Med-E-RAs and Med-E-Pops and researchers/writers with readers is one-way (see section 1.2). The Med-E-RAs genre not only helps the creation of Med-E-Pops but also influences its textual and linguistic convention structure. Needless to say, the recipients of Med-E-Pops are mainly non-specialised readers. However, it can be concluded from the survey-based study displayed in Chapter 2 that doctors admit to reading Med-E-Pops to stay up-to-date. Participants agreed to read Med-E-Pops on specialised websites like *DocGuide* and more popular publications such as *The New York Times* online due to a lack of time, lack of access to the specialised journals, and also agreed to recommend them to their patients (Herrando-Rodrigo 2014). This study confirms that although Med-E-Pops may be accepted in different communities at varying degrees, medical personnel, members of the Med-RAs discourse community, are able to recognise instances—reliable scientific content and formal and linguistic conventions—of the old genre (Med-RAs) in the new and emerging genre (Med-E-Pops). Therefore, not only members of the old genre—members of the Med-RAs discourse community who have prior experiences and expectations based on knowledge rules—but also the lay audience as the main target audience of the Med-E-Pops genre accept the Med-E-Pop genre as a reliable and valid vehicle to disseminate medical findings outside the scientific community. This fact contributes to this dissertation's conceptualisation of the Med-E-Pops genre as a full member of the medical colony and the medical popularizations genre.

An implication of these findings is that electronic genres, such as Med-E-Pops, should be conceptualised as goal-oriented (Swales 1990). Their communicative purpose constitutes the priority for the genre. That purpose encourages particular text structures and displays conventionalised lexico-grammatical and rhetorical strategies. Bhatia's (1994) and Swales' (1990) genre analysis model were based on a sender-oriented view and on the communicative and functional purposes of

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68 Contrary to previous studies (see section 1.3), Med-E-Pops take no advantage of the linking and interactivity of this new electronic medium of disseminating medical knowledge outside of the medical discipline.

the genre.<sup>69</sup> Their models of genre analysis focus their study on three issues: the role of the writers, the discourse community and the communicative purpose of a given text. Drawing from this genre-model for the study of genres, Askehave and Nielsen's (2005) developed their own methodology for approaching electronic genres. Inspired by their study, this analysis of the Med-E-Pops genre is based on the exploration of the communicative purpose, the moves structure (see section 3.1.2) and rhetorical strategies (see sections 3.2, 3.3, 3.4 and 3.5) used in Med-E-Pops as adaptations of Med-E-RAs.

The observation of the rhetorical strategies proposed by Askehave and Nielsen (2005) for the analysis of electronic genres is approached from the angle of the concept of voice as shown in the second part of this chapter. Therefore, to display the discussion of findings regarding the Med-E-Pops genre in a stratified way, section 3.1.2 observes both the move structure and the communicative purpose of each Med-Pops move, as part of the form and purpose of the genre under study.

### **3.1.2. Contrastive analysis of Med-E-RAs and Med-E-Pops genres**

As mentioned in section 2.2.1 from the Methods chapter the results from this analysis led this dissertation towards the conceptualisation of Med-E-Pops as a new combination of form and purpose (Crowston and Williams 2000) that anticipates the potential problems of an audience characterised by its multidisciplinary and its capability of understanding texts written in English and disseminated on the Internet. So, to explore the genre under study I finally used Askehave and Nielsen's (2005) approach to electronic genres to interpret and discuss the findings related to the context in which this dissertation studies the concept of the voice of Med-E-Pops writers, that is, the Med-E-Pops genre. The model of analysis of Askehave and Nielsen (2005), as commented on in the first part of this section, bases its methodology on the observation of three factors: the communicative purpose, the moves and rhetorical strategies of electronic genres.

Askehave and Nielsen's (2005) model of generic analysis is based on Swales' (1990) model, which places the emphasis on the role of the writers, the discourse

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69 The roles of the recipient may seem to be unexplored. Nonetheless, the study of the roles of the recipients opens a broad and complex research field, which this piece of study would leave to one side for further research for the purposes of simplicity.

community and the purpose of a given text. Before carrying out the discussions of the results related to the communicative purpose and information structure of Med-E-Pops genre moves, adapted from Askehave and Nielsen's (2005) model of genre analysis, it is worth considering two of Swales' (1990) variables for the study of genres in these corpora, that is, the writers and the discourse communities which may complete Askehave and Nielsen's (2005) approach to electronic genres. As introduced in section 1.3, Med-E-Pops writers can be considered as "entrepreneurs of science" (Myers 1986), in this corpus being specialised journalist as is the case with the *New York Times Health Guide*, doctors who work for the e-journal as in *Health Day News* or PhD medical students as in *Johns Hopkins News Release*. The e-journals that do not mention the name of the Med-E-Pops writer do include a reference similar to the one quoted below from the *HealthDay News* home web site: "Content developed by medical writers, editors, and physicians, many the recipients of dozens of national awards". The Methods chapter has already stated that some publications include the names of the writers and others (*DocGuide*, *HealthDay News*, *Medical News Today* and *Science Daily*) do not include the name of the Med-E-Pops writers. Whereas one single writer writes Med-E-Pops, Med-E-RAs are co-authored—since many empirical experiments have to be carried out and many tests have to be done to validate the study. The pressure of getting the medical texts published is different among Med-E-Pops and Med-E-RAs writers. Med-E-Pops writers construct their Med-RAs version according to their editors' guidance. In other words, the writers are told which Med-RAs they have to write about, as explained in Chapter 2. Therefore, whereas Med-E-Pops writers are told what to adapt to the e-journal, Med-E-RAs researchers suffer an arduous peer-review process of publication.<sup>70</sup> This is a long and complex process in which not only scientific factors may allow a Med-RA to be published but also different constraints related to mastery of EAPs and genre-related aspects widely studied by linguists (Bondi 2004; Burgess and Cargill 2008; Mauraneen 2011, to name a few).

Observing the discourse community when studying genres was another of the variables suggested by Swales' (1990) genre analysis model. Whereas Med-

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70 *HealthDay News* states on its website that: "Our editors receive advance copies of major medical journals prior to publication allowing for interviews of the authors and researchers to produce timely in-depth reports. News stories are linked directly to abstracts from the primary sources and are coded by specialty." As can be inferred, the responsibilities and implications of Med-E-Pops writers and Med-E-RAs writers are completely different.

E-Pops deal with the dissemination of scientific findings outside of the scientific community (Giannoni 2008), Med-RAs are explicitly designed to be understood and accepted by members of the Med-RAs researchers' discourse community. Therefore, Med-E-Pops focus on the object of the Med-E-RAs study and the Med-E-RAs focus on the research approach of the study, only understandable by discipline-specific members. Both discourse communities, Med-E-Pops and Med-E-RAs, use different sources of knowledge to keep themselves up-to-date. That is, while the lay Internet audience seeks medical information in specific e-journals mainly designed for them, medical researchers look up medical information in discipline-specific journals. In the contrastive analysis it was noted that a further reflection should be made regarding the Med-E-Pops discourse community. This potential audience comprises a wide range of readers who should be competent in English—being native speakers or not—and who are regular Internet users. This international readership may master different levels of computer commands. These readers may be regular medical-information consumers who enjoy keeping themselves up-to-date with the newest health research or they may be readers who sporadically look for something in particular they might be suffering from.<sup>71</sup> It should not be overlooked that the high demand from this varied readership spectrum with a potential wide variety of cultural, professional and personal backgrounds has inspired e-journals to come to a generic agreement. In other words, the medium and the discourse community (writers and readers) have construed and therefore accepted a valid generic evolution (see section 1.2.4) about medical dissemination articles or medical popularization (see Orlikowski and Yates' 1994 approach to genre relations for example).

Having considered the previously mentioned variables of Swales' (1990) traditional approach to genre studies in order to enrich the exploration of this genre under study, I will now continue with the discussion of this research findings by applying Askehave and Nielsen's (2005) approach to electronic genres focusing now on the move structure of Med-E-Pops and on the communicative purpose of each move. Therefore, to carry out a formal description of the Med-E-Pops genre, I focused my analysis on the move structure tracing it back to Nwogu's (1991) study on JRVs (journalistic reported versions). In his study, Nwogu distinguishes—as introduced in section 1.3—nine moves that were

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71 Think for instance about how people nowadays google their illnesses or search on websites such as *www.diagnosticsmedicos.com* to read more about their illnesses.

identified according to their communicative purpose. These moves have also been acknowledged in the Med-E-Pops corpus following this researcher's observations but with certain boundary limitations. Med-E-Pop12 is used below to exemplify Nwogu's move structure and its applicability to this Med-E-Pops corpus:

**MOVE ONE:** Presenting background information

- a) by reference to established knowledge in the field.
- b) by reference to main research problem.
- c) by stressing the local angle.
- d) by explaining principles and concept.

*VALHALLA, NY—June 2, 2009—A new study challenges the prevailing wisdom that to improve pregnancy outcomes, all women, even those who are obese, should gain weight during pregnancy.*

**MOVE TWO:** Highlighting overall research outcome

- a) by reference to main research results.

*The study found that obese pregnant women who followed a well-balanced diet and gained little or no weight had maternal-foetal outcomes that were equal to or better than those who gained substantial weight. The findings appear in the June issue of [The Journal of the National Medical Association].*

**MOVE THREE:** Reviewing relating research

- a) by reference to previous research.
- b) by reference to limitations of previous research.

*For years, doctors and other healthcare providers have managed pregnant patients according to guidelines issued by the American College of Obstetricians and Gynaecologists (ACOG).*

**MOVE FOUR:** Presenting new research

- a) by reference to authors.
- b) by reference to research purposes.

**MOVE FIVE:** Indicating consistent Observations

- a) by stating important results.
- b) by reference to specific observations.

*In 1986, ACOG stated, "Regardless of how much women weigh before they become pregnant, gaining between 26 to 35 pounds during pregnancy can improve the outcome of pregnancy and reduce their chances of having the*

*pregnancy end in foetal death.” In 1990, the Institute of Medicine (IOM) recommended that overweight women should gain at least 15 pounds during pregnancy.*

**MOVE SIX:** Describing data collection procedure

- a) by reference to authors.
- b) by reference to source of data.
- c) by reference to data size.

*The average weight gain in the control group was 31 pounds, compared with 11 pounds in the study group. Twenty-three extremely obese patients lost weight during their pregnancy.*

**MOVE SEVEN:** Describing experimental procedure

- a) by recounting main experimental processes.

*The findings showed that there were no foetal deaths and no growth-restricted infants in the study group. Also, there were fewer babies weighing more than 10 pounds in the study group than in the control group. Moreover, women in the study group gained less weight, had fewer caesarean deliveries, were less likely to develop gestational diabetes, and retained less weight*

**MOVE EIGHT:** Explaining research outcome

- a) by stating a specific outcome.

*The researchers concluded that obese pregnant women may be placed on a healthy, well-balanced, monitored nutritional program without adverse maternal-foetal outcomes.*

- b) by explaining principles and concepts.
- c) by indicating comments and views.

*“Women who are obese when beginning a pregnancy are, by definition, unhealthy,” said lead author Yvonne S. Thornton, MD, Maternal-Foetal Medicine, New York Medical College. “To say that they should gain even more weight is counter-intuitive, and our study bears that out. Rather than focusing on numerical endpoints with respect to weight gain, we need to focus on making these women healthier by getting them to eat a well-balanced diet.”*

- d) by indicating significance of main research outcome.
- e) by contrasting present and previous outcomes.

*The IOM and the National Research Council (NRC) have recently re-examined and updated their 1990 recommendations for weight gain during pregnancy. The IOM-NRC findings released at the end of*

*May were essentially the same as the 1990 guidelines, except for obese pregnant women.*

**MOVE NINE:** Stating research conclusions

- a) by indicating implications of the research.

*Based on the recently released guidelines for pregnancy weight gain, the Institute of Medicine now advocates that obese pregnant women should limit their weight gain to between 11 to 20 pounds. This recommendation may still be too excessive for the extremely obese pregnant patient.*

- b) by promoting further research.

- c) by stressing the local angle.

*The present study agrees with the new IOM guidelines about counselling and monitoring pregnant obese patients but goes further in stating that obese pregnant women do not need to gain any weight during their pregnancy.*

From a contrastive angle, it can be seen that Med-E-Pops are shorter texts—due to web-hosting space limitations as section 1.2.5 points out—than Nwogu’s JRVs. Therefore, it was not always easy to set up boundaries and correlations among Nwogu’s JRVs moves as I intended to show in the example included above. These shorter texts can be considered as the result of a genre evolution and adaptation to both readership needs or expectations and the Internet medium constraints. Since JRVs’ move structure yielded no direct taxonomy for the analysis of Med-E-Pops I decided for the sake of accuracy to compare the Med-E-RAs move structure to the Med-E-Pops information structure. Therefore, having observed this—and drawing on previous studies reviewed in Chapter 1—it must be noted that the Med-E-Pops genre move structure mirrors their Med-E-RAs counterparts’ move structure (see below) obtaining a classification that could be applicable and extended to all the Med-E-Pops corpus irrespective of the e-journal they were published in. Table 13 below shows the results of the manually scanned contrastive process of the Med-E-RAs move structure and communicative purposes with the Med-E-Pops information structure and communicative purposes.



Med-E-Pops	Number of short paragraphs	Med-E-RAs content of the first Med-E-Pops move (Introduction)	Med-E-RAs content of the second Med-E-Pops move (Contextualisation of the research process)	Med-E-RAs content of the third Med-E-Pops move (Further results)	Med-E-RAs content of the fourth Med-E-Pops move (Conclusions: Reflection and evaluation)	Med-E-RAs content of the fourth Med-E-Pops sub-move (Conclusions: Advice, further implications related to the research findings)	Hyperlink for further explanations through the text
1	6	Conclusion: The cause of Pre-eclampsia may be a virus, a study has found.	Method.	Results.	Where the study appears: RA Source	Indirect speech acknowledges and direct speech informal interview. Background information about the researchers	Yes
2	5	Conclusion: Pregnant woman with depression are at increased risk of premature delivery, a study has found.	Source of RA and methods.	Results.	Direct speech informal interview	Background information about the researchers and direct and indirect comments	Yes
3	4	Conclusion and RA source reference.	Method.	Results.	Highlights the new findings of the RA and further benefits by indirect speech.		Yes
4	7	Conclusion: A new test may help doctors to diagnose.	Method.	Results (split into 2 paragraphs).	Where the study appears: RA Source	Direct speech, informal interview dealing with the benefits of study	No
5	5	Conclusion: British scientists have developed an online tool for predicting adult-onset diabetes.	Methods.	Results.	Where the study appears: RA Source	Background information about the researchers and direct and indirect comments	Yes

DISCUSSION OF FINDINGS

6	10	Conclusions with a reference to the Med-RA source of publication.	Background information about the researchers and direct and indirect comments.	Method (split into 3 paragraphs).	Results (split into 4 paragraphs)	Conclusion explained briefly with technical terms	No
7	5	Conclusions: Researchers have identified new treatment for AIDS according to a report published online (link). Where the study appears: RA Source	Methods.	Results.	Reflection: the treatment seems good but expensive for Africa	Reflection about the low global donation to pay for treatments in Africa	Yes
8	7	Conclusions with a reference to the Med-RA source of publication.	Method (split into 2 paragraphs).	Results (split into 2 paragraphs).	Further conclusions with direct speech from the authors.	Further conclusions indirect speech from the authors.	No
9	7	Conclusions with RA source reference and direct speech from the authors (split into 2 paragraphs)	Method	Results (split into 3 paragraphs).	Announcement of further research		No
10	17	Conclusion and findings according to Johns Hopkins experts (split into 6 paragraphs). Where the study appears: RA Source	Results.	Method (split into 5 paragraphs).	Pieces of advice to aid people with vestibular dysfunction (split into 2 paragraphs).	Future Research, next steps, funding and researchers involved (split into 3 paragraphs).	No
11	10	Conclusion and findings according to Johns Hopkins experts (split into 3 paragraphs). Where the study appears: RA Source	Results (split into 2 paragraphs).	Method (split into 2 paragraphs).	Pieces of advice (split into 2 paragraphs).	Research team and funding.	No

12	7	Conclusion and findings. Where the study appears: RA Source	Method	Results (split into 3 paragraphs).	Researchers' further conclusions by indirect speech (split into 2 paragraphs).	No
13	13	RA13 challenges the prevailing knowledge about this matter with its conclusions. Background. Where the study appears: RA Source (split into 3 paragraphs).	Method (split into 3 paragraphs).	Results (split into 2 paragraphs).	Piece of advice for women suffering from overweight when pregnant	No
14	10	Conclusion and findings. Where the study appears: RA Source (split into 3 paragraphs).	Method	Results (split into 4 paragraphs). Including recommendation for daily dietary.	The need of future research (split into 2 paragraphs).	No
15	5	Conclusion	Method Where the study appears: RA Source.	Results (split into 2 paragraphs).	Potential future research	Yes
16	16	Conclusion and findings (split into 2 paragraphs).	Method. Where the study appears: RA Source (split into 4 paragraphs).	Results (split into 3 paragraphs).	Indirect speech about previous research related to this one (split into 2 paragraphs).	No
17	15	Conclusion: RA17 questions former RA finding	Previous studies were elusive (split into 4 paragraphs)	Former studies' defend their research (split into 4 paragraphs)	Method. Results. Where the study appears: RA Source. (split into 2 paragraphs).	No

## DISCUSSION OF FINDINGS

18	8	Conclusions with a reference to the Med-RA source of publication.	Background and previous research (split into 2 paragraphs).	Method (split into 2 paragraphs).	Results	The need of future research and researchers involved (split into 2 paragraphs).	No
19	9	Conclusion	Background. State-of-Art of the issue (split into 2 paragraphs).	Method	Results (split into 4 paragraphs). Where the study appears: RA Source.	Researchers involved.	No
20	8	Conclusions with a reference to the Med-RA source of publication. (split into 2 paragraphs).	Method	Results (split into 2 paragraphs).	Further explanations with pieces of advice		No
21	6	Conclusion and findings. Where the study appears: RA Source (split into 2 paragraphs).	Method	Results (split into 2 paragraphs).	A reflection on future consequences of illness.		No
22	17	Conclusion and findings (split into 3 paragraphs).	Other researchers' opinions and illness background (split into 4 paragraphs)	Where the study appears: RA Source, researchers involved and piece of advice (split into 3 paragraphs).	Method (split into 3 paragraphs).	Results (split into 4 paragraphs).	No
23	14	Conclusion and findings (split into 2 paragraphs).	Method (split into 2 paragraphs).	Results. Where the study appears: RA Source. Researchers involved and funding (split into 2 paragraphs).	Five different reviews on the RA split into 8 paragraph		Yes

24	8	Conclusions with a reference to the Med-RA source of publication (split into 2 paragraphs).	Method and researchers involved (split into 2 paragraphs).	Results (split into 3 paragraphs).	Summary from the RA	No
25	9	Conclusions with a reference to the Med-RA source of publication (split into 2 paragraphs).	Method and researchers involved (split into 2 paragraphs).	Results (split into 2 paragraphs).	Summary from the RA (split into 2 paragraphs).	No
26	15	Conclusions with a reference to the Med-RA source of publication, background of the research and researchers' direct messages (split into 5 paragraphs).	Method (split into 3 paragraphs).	Results (split into 4 paragraphs).	Researchers advised should be followed to observe the increase of risk	Yes
27	9	Conclusions with a reference to the Med-RA source of publication.(split into 2 paragraphs).	Method (split into 3 paragraphs).	Results (split into 3 paragraphs).	Reflection from author in direct speech from RA	No
28	14	Conclusions with a reference to the Med-RA source of publication.(split into 3 paragraphs).	Method	Results (split into 3 paragraphs).	Positive review from another researcher	No
29	14	Conclusions with a reference to the Med-RA source of publication.(split into 3 paragraphs).	Method and background (split into 3 paragraphs).	Results (split into 2 paragraphs).	Positive review that validates the study.	No
30	7	Conclusion and findings	Results (split into 4 paragraphs) explained by the researchers in direct speech.	Where the study appears: RA Source.	Future plans to create a computer model to help to determine factors.	No

DISCUSSION OF FINDINGS

31	6	Conclusion and findings	Method (split into 3 paragraphs).	Results (split into 2 paragraphs) with direct speech from another news release.	Where the study appears: RA Source	No	
32	17	Conclusion and findings (split into 5 paragraphs).	Where the study appears: RA Source	Method (split into 3 paragraphs).	Results (split into 3 paragraphs).	Pieces of advice and reflections from the researchers (split into 2 paragraphs). Other researchers' positive review (split into 3 paragraphs).	No
33	16	Conclusions with a reference to the Med-RA source of publication. (split into 3 paragraphs).	Method (split into 3 paragraphs).	Results (split into 2 paragraphs).	Positive review of an external researcher (split into 2 paragraphs).	Positive review of another external researcher and pieces of advice (split into 2 paragraphs).	No
34	9	Conclusion and findings. Where the study appears: RA Source (split into 6 paragraphs).	Method	Results (split into 2 paragraphs).			No
35	11	Conclusion and findings with direct speech from the main researcher. Where the study appears: RA Source (split into 4 paragraphs).	Method	Results (split into 3 paragraphs).	Further study is required to confirm results	Researchers involved (split into 2 paragraphs).	Yes
36	19	Conclusions with a reference to the Med-RA source of publication. (split into 3 paragraphs).	Background in Africa and AIDS (split into 5 paragraphs).	Lead researcher's reflection	Method (split into 4 paragraphs).	Results and co-author's reflections (split into 4 paragraphs).	No

37	24	Conclusions with a reference to the Med-RA source of publication. (split into 4 paragraphs).	Method	Results (split into 16 paragraphs).	Further studies, researchers involved and funding Results (split into 3 paragraphs).	No
38	11	Conclusions with a reference to the Med-RA source of publication. (split into 2 paragraphs).	Method (split into 2 paragraphs).	Results (split into 4 paragraphs).	The RA will be accompanied by the RA	No
39	8	Conclusions with a reference to the Med-RA source of publication. (split into 5 paragraphs).	Method (split into 4 paragraphs).	Results (split into 4 paragraphs).	Positive review from other researchers (split into 4 paragraphs).	No
40	8	Conclusion and findings with background information. Where the study appears: RA Source (split into 5 paragraphs).	Method	Results (split into 4 paragraphs).		No

Table 13. Results of the manually scanned contrastive process of the Med-E-RAs move structure and communicative purposes with the Med-E-Pops information structure and communicative purposes.

Therefore, after analysing both corpora in isolation and later contrasting each counterpart—Med-E-RA and its corresponding Med-E-Pop—it has been observed that the textual organisation of Med-E-Pops mainly consists of four moves. There are Med-E-Pops that include a sub-move in the fourth move. This sub-move is included in the Med-E-Pops published in *Science Daily* and *Johns Hopkins* whereas for instance *the New York Times Health Guide* usually included no sub-move in the fourth move as explained below. As is the case with JRVs, Med-E-Pops moves or sections have no heading, in contrast to Med-RAs sections. By way of summary table 14 shows the relationship between Med-E-Pops and Med-E-RAs alongside their contrasting functions:<sup>72</sup>

<i>Med-E-RAs structure</i>	<i>MED-E-Pops structure</i>
Introduction	<b>MOVE 1 <i>Introduction</i></b> Summarises the Med-E-RA conclusions (some results) and names the authors, date and journal of publication
Methods (and patients)	<b>MOVE 2 <i>Contextualisation of the research process</i></b> Methods; What researchers did
Results	<b>MOVE 3 <i>Further results</i></b>
Discussion	<b>MOVE 4 <i>Conclusions</i></b> We can find sub-moves “a” or the sum of “a” and “b”. a) Reflection and/or evaluation of the research done by related or unrelated researchers. b) Advice (with further implications); recommendations related to the research findings.

Table 14. *Move relationship between Med-RAs and Med-E-Pops according to the information structure and communicative purposes of each move.*

All the Med-E-Pops share the same moves in terms of their communicative purpose.<sup>73</sup> Med-E-Pops first move was labelled in this study as *Introduction*. It

72 I interpret that moves or sections can be designated with the same terms, but that their uses or functions differ to a large extent: e.g. Both Med-RAs and Med-E-Pops start off with an introduction but a Med-E-Pop introduction is about Med-RAs conclusions and genre-specific communicative needs. Therefore, what I first distinguish in the analysis as sections in Med-E-Pops genre is later interpreted and classified as Med-E-Pops moves.

73 By *move* this dissertation means a text segment made up of a bundle of linguistic features (lexical meanings, propositional meanings, illocutionary forces, etc.) which give the segment a uniform orientation and signal the content of discourse in it. Each move is taken to embody a number of constituent elements or sub-moves, which combine to constitute information in the move. Nwogu (1991: 114)



has been observed that all the introductory moves summarise the Med-E-RAs conclusions and some of the main results as shown in the example below. 37 Med-E-Pops introduce the Med-RAs source, the name of the main researchers and date of publication in this section. This information is directly hyperlinked to the institution or hospital which the main researcher worked for.

(8) In what is believed to be the first U.S. study designed to prevent anxiety disorders in the children of anxious parents, researchers at the **Johns Hopkins Children's Center** have found that a family-based program reduced symptoms and the risk of developing an anxiety disorder among these children.

Despite its small size, the study suggests that as few as eight weekly family sessions of cognitive behavioural therapy go a long way to prevent or minimize the psychological damage of childhood anxiety. Results of the study will appear in the June issue of the *Journal of Consulting and Clinical Psychology*. [Med-E-Pop11]

As can be seen, the Med-E-Pops Introduction move also makes mention of the Med-E-RA journal which is the specialised journal. The name of the journal is hyperlinked to the abstract of the Med-E-RA. 8 Med-E-Pops also include another hyperlinked piece of information. The 8 Med-E-Pops published in *The New York Times Health Guide* hyperlinked the central medical topic—for instance the word *pre-eclampsia* in Med-E-Pop1—to other related Med-E-Pops published by this e-journal. The remaining 32 Med-E-Pops from the corpus under study do not present further explanations or references by hyperlinking further information related to the medical topic reported in the Med-E-Pop. In the Med-E-Pops introduction, the rationale of the research makes no reference to previous studies of literature review. In addition, a very brief comment that attempts to summarise the Med-E-RA conclusions is also included in these introductions as shown in the examples below:

(9) In conclusion, we have demonstrated that 2009 influenza A(H1N1) infection– related critical illness predominantly affects young patients with few major comorbidities and is associated with severe hypoxemic respiratory failure, often requiring prolonged mechanical ventilation and rescue therapies. With such therapy, we found that most patients can be supported through their critical illness. [Med-E-RA40]

(10) CHICAGO – October 12, 2009 – Critical illness among Canadian patients with influenza A(H1N1) occurred rapidly after hospital admission, often in young adults, and was associated with severely low levels of oxygen

in the blood, multi-system organ failure, a need for prolonged mechanical ventilation, and frequent use of rescue therapies, according to a study to appear in the November 4 issue of [*JAMA*]. [Med-E-Pop40]

The following Med-E-Pops section, which I have labelled *Contextualisation of the Research Process*, consists of a summary of the Med-E-RAs Methods move. 4 Med-E-Pops writers chose to name the Med-E-RAs source again in this section. The most characteristic finding of the contrastive analysis is that whereas Med-E-RAs researchers adopt an agentless attitude towards their own research in the corresponding method move, Med-E-Pops writers directly name the medical researchers who led the research. Moreover, Med-E-Pops writers use the active voice combined with a finite tense: the past simple to refer to what the researchers, and not Med-E-Pops writers, conducting the research reported. That is, Med-E-Pops simply narrate in a direct way what researchers did. Some Med-E-Pops writers also quote the professional affiliation of the researchers in this move to emphasise the good reputation of the researchers and to build trust about the research. See for instance:

(11) *Materials and Methods*

Laboratory technicians were blinded to all food labelling information. All samples were ground before analysis. **Potassium was measured using the Association of Analytical Communities (AOAC) official method 985.01. Phosphorus was measured using AOAC official method 984.27;** both the potassium and phosphorus assays are inductively coupled plasma atomic spectroscopy procedures. Protein was measured using the AOAC official method 990.03, the Dumas nitrogen combustion method, with the Elementar Americas Rapid-N apparatus (Elementar Americas, Mt. Laurel, NJ). A Perkin-Elmer model Optima 2000 DV equipped with a model AS 90 plus Autosampler was used (Perkin-Elmer, Waltham, MA). Sample weights were obtained with a Sartorius model U 4800P balance (Sartorius Corp., Edgewood, NY). All instruments were calibrated according to manufacturers' specifications. Samples from the laboratory were routinely analyzed for accuracy by the American Association of Feed Control Officials and the American Oil Chemists Society. [Med-E-RA34]

(12) In the new study, **Dr. Richard Sherman and Dr. Ojas Mehta from the University of Medicine and Dentistry of New Jersey, Robert Wood Johnson Medical School, looked at the** potassium and phosphate content in 'enhanced' and additive-free meats and poultry from area supermarkets. [Med-E-Pop34]

There is only one pair (Med-E-RA29 and Med-E-Pop29) that present a slight variation. The Med-E-RA Methods move includes limitations and further implications of the research methodology with the subject pronoun *we* followed by active verbs. Med-E-Pop29 reports these comments but in its final move:

(13) Further investigations in larger and more homogenous study populations will be necessary to analyze other covariates that may be responsible for the association with VEGFR2+-BMD progenitor cell levels. Finally, our data may raise concern about clinical situations that mobilize hematopoietic, and possibly endothelial, progenitors because these cells might induce unintended adverse effects. Fast tumor regrowth has been observed with increased levels of circulating BMD progenitors induced by stem cell growth factor (48, 49) as well as by vascular trauma resulting from radiation (16) or from vascular disrupting agents in tumor-bearing animals (25). Recently, we showed for the first time that vascular disrupting agent-induced VEGFR2+-BMDprogenitor mobilization is also present in human patients (14). Consequently, “vasculogenic rebounds” induced by anticancer therapies and possibly sustained by stem cell growth factor could adversely promote BMD progenitor mobilization and tumor angiogenesis, and, therefore, could increase the risk of relapse, perhaps at metastatic sites (50). [Med-E-RA28]

(14) Additional studies are needed in larger study populations to confirm that endothelial progenitor cells are implicated in metastasis. If confirmed, these cells could potentially be measured in patients to allow for early detection of metastatic disease and could be targeted by new drugs to prevent the spread of cancer, according to the researchers. [...] Dr. Taylor believes these study results may potentially open new research strategies, which may take into account the study of circulating endothelial cells and progenitor cells in paediatric patients. “Monitoring of these cells in larger and more homogenous study populations will help us understand the biology of tumour vessels and subsequently tumour growth in these diseases,” she said. [Med-E-Pop28]

In 2.2.1.2 section I pointed out that the Med-E-RAs included an acknowledgement or separate subsection that referred to the funding of the research.<sup>74</sup> Med-E-Pops also mentioned the funding if their counterpart Med-E-RAs mentioned it, but the funding comment was embedded either in Move 1 the *Introduction* or Move

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74 This dissertation has observed that Med-E-RAs are not so homogeneous with the canonical structure of RAs since almost all of the Med-E-RAs close with an *acknowledgments* and *funding* subsection, and not a with a final conclusion.

2 *Contextualisation of the Research Process* and not in a separate subsection as was the case in Med-RAs. 20% of the Med-E-Pops made an explicit reference to Funding. Examples 15 and 16 illustrate this:

(15) Dr. Cullins and Mrs. Fjerstad report having been employed by Planned Parenthood Federation of America (PPFA) at the time of the study. Drs. Lichtenberg and Trussell report serving on the PPFA National Medical Committee. No other conflict of interest relevant to this article was reported. [Med-E-RA23]

(16) The new study was conducted and paid for by Planned Parenthood, the nation's largest abortion provider. It analyzed the records of 227,823 women who had abortions at its clinics from January 2005 to June 2008. Of those, 92 had serious infections. The results are to be published on Thursday in *The New England Journal of Medicine*. [Med-E-Pop23]

Finally, the Med-E-RAs that explicitly referred to their funding sources stated somewhere in the text that this funding had no influence in the study design. However, this was not mentioned in any Med-E-Pop:<sup>75</sup>

(17)The sponsor had no role in the design, execution, data analysis, or writing up of the study. [Med-E-RA15]

The third move of Med-E-Pops, labelled here as *Further Results*, showed a simplification and reformulation of the Med-E-RAs results. I named this section *Further Results* and not just *Results* because as mentioned above, some Med-E-Pops introduced some of the research results in the *Introduction* move. 3 writers named the source of the Med-E-RAs in this move and not in the Introduction move (Med-E-Pop22, Med-E-Pop23 and Med-E-Pop30). Unlike the results of the Med-E-RAs, Med-E-Pops results are not accompanied by visual aids or representations. Since some Med-E-RAs do not include an explanation of certain graphs—due to the fact that the members of the discourse community

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75 The contrastive example is included below:  
Funding: China Medical Board of New York, WHO, and Shandong Provincial Bureau of Health.

[Med-E-RA15]

The research was financed by the World Health Organization, the Shandong provincial health department and the China Medical Board of New York, an independent medical foundation begun in 1914 by the Rockefeller Foundation, which supports medical education and research across Asia. [Med-E-Pop15]

are expected to understand figures and visual aids—Med-E-Pops cannot assume readers' previous specific medical knowledge and therefore they simplify and reformulate the Med-E-RAs results included for instance in graphs. See for example:

**Table 1.** Odds ratios (95% CI) for CP versus non-CP babies in the APO case group for the APOs of interest

Adverse pregnancy outcome	APO cases (n = 717)		OR (95% CI)	P value
	CP babies (n = 289)	Non-CP babies (n = 428)		
APH (n = 340)	132	208	0.89 (0.65–1.21)	0.49
No APH (n = 377)	157	220		
SGA (n = 241)	91	150	0.85 (0.61–1.19)	0.36
No SGA (n = 476)	198	278		
PTB (n = 451)	200	251	1.58 (1.14–2.20)	0.005
No PTB (n = 266)	89	177		
Spontaneous PTB (n = 266)	118	148	1.00 (0.67–1.49)	0.93
Iatrogenic PTB (n = 185)	82	103		
PIHD (n = 23)	8	15	0.78 (0.30–2.00)	0.74
No PIHD (n = 694)	281	413		

(19) Virus exposure was associated with all four negative outcomes, but especially highly with pre-eclampsia. Mothers of babies who tested positive for any virus were more than five times as likely to have had pre-eclampsia, and those whose babies tested positive for a herpes virus were almost six times as likely. [Med-E-Pop1]

The fourth Med-E-Pops move, named here *Conclusions* move, may display one sub-move (sub-move *a*) or two (sub-moves *a* and *b*) depending on the electronic publication. 16 Med-E-Pops only had sub-move *a* in this fourth section. Sub-move *a* deals with further reflection and/or evaluation of the research done by related or unrelated researchers as exemplified below:

(20) This is the first study to combine gene expression and genetic studies to identify potential host immune response genes to TB. Using this method, the authors showed that the inflammatory mediator CCL1 is specifically associated with host susceptibility to pulmonary TB. The authors suggest that this method could be used not only to predict the outcome of disease but also to discover new strategies for its treatment. [Med-E-Pop3]

(21) Matlaga explains that kidney stones are often caused by an excess of a dietary component known as oxalate, which normally binds with calcium and is flushed out of the body. Roux-en-Y surgery might reduce the amount of calcium that patients absorb, contributing to kidney stone formation. Consequently, Matlaga adds, doctors may be able to help patients avoid kidney stones through calcium supplements or other interventions. Kidney stones are solid mineral crystals that form within the kidneys and

can cause pain that is frequently severe. Each year, people make almost 3 million visits to health care providers and more than half a million people go to emergency rooms for kidney stone problems. [Med-E-Pop19]

These Med-E-Pops include further evaluation on the study always gathered in the Med-E-RA. This is transferred into the Med-E-Pop by reporting the researchers' comments. See for example:

(22)The obvious goal is to prevent crashes and other dramatic incidents while maximizing patients' rights and freedom of mobility [...] [Med-E-RA4]

(23)Among drivers with Alzheimer's disease, those who performed better on the off-road tests made fewer on-road safety errors. "The goal is to prevent crashes while still maximizing patients' rights and freedom to be mobile," said Dawson. [Med-E-Pop4]

24 Med-E-Pops with sub-move *b* include recommendations, further implications and evaluation on the study and on the Med-E-RAs findings. These recommendations are obtained directly from the Med-E-RA counterpart and are usually expanded by information obtained from interviews with the researchers.

(24) It may be more complex when sand is involved, said the lead author of the study, Christopher D. Heaney of the University of North Carolina in Chapel Hill. It may be that the bacteria can continue to live in the sand even after the bacteria in the water has returned to normal levels. Dr. Heaney said people should wash their hands before they eat on the beach. [Med-E-Pop20]

(25)Sward said one of the most important ways to make sure your child doesn't smoke is to not smoke yourself. "The strongest predictor of whether or not kids will smoke is whether their parents smoke," she said. She also recommended letting them know about your struggles with your tobacco addiction. Let them know the downside of smoking, she suggested.

If you don't smoke, Moss said you still need to talk with your kids, and it's important to let them know that you don't want them to smoke. "Kids of parents who openly express disapproval and have rules against smoking are less likely to smoke," she said.

Moss also advised parents to keep computers in public places, and to let your teens know that you might periodically review the pages they've visited. [Med-E-Pop33]

(26) The study is ongoing, but Kabat recommended that postmenopausal women try to keep insulin at normal levels through weight loss, regular exercise and other methods. [Med-E-Pop35]

Med-E-Pops writers use this move to report sequences that will be further analysed in section 3.5 for the interpretation of the concept of the voice of Med-E-Pops writers.

It is apparent from the genre contrastive analysis that the register and context of both Med-E-RAs and Med-E-Pops differ in several aspects. Whereas Med-RAs are, among other things, one of the medical personnel tasks for the reinforcement of their professional status and prestige, Med-E-Pops are just considered vehicles for medical knowledge dissemination with no further implications for their writers. Therefore, I found it essential to explore whether these genres were so different because Med-E-Pops are popular medical texts published on such an ungovernable domain, such as the Internet. Therefore, one of the main factors that I attempted to observe was the potential informality resulting from Med-E-Pops as medical popularizations available on the Internet. At first sight these texts may seem to be informal, chatty or even misleading or sensationalist Med-RAs adaptations due to the fact that they could be conceptualised as simple medical lay-popularizations published on the Internet. These texts (Med-E-Pops) might be considered as “translations”, versions or adaptations of Med-RAs for non-specialised readers who are used to surfing the Internet. I used Giunchi’s (2002) study on web-posted medical accounts to contextualise this study better. Nonetheless, our studies differ in their final statements. Firstly, the manually scanned corpus observation carried out for this piece of research does not suggest, contrary to Giunchi’s, that Med-E-Pops insinuate that a magic cure could be found on the Internet. What I have observed is basically a reformulation of medical content. This reformulation makes information understandable for lay readers because the text is focused on the final research product, leaving specific data collection or research procedures out of the Med-E-Pops narrative. A certain amount of Med-E-RAs information must be left out of the Med-E-Pops for several reasons; medium constraints (limited space), the audience’s ability to understand medical knowledge and readership expectations. The discourse used in Med-E-RAs is rearranged to suit the purpose of the Med-E-Pops’ communicative intention, which is to disseminate reliable medical scientific knowledge outside the medical community—although Spanish doctors say they read it too, as shown in Chapter 2. With Giunchi (2002) I have observed that titles, moves, direct and reported speech, the density and organisation and the

cohesion and reference differ from Med-E-RAs.<sup>76</sup> A contrastive study of these aspects—the titles, the density and organisation and the cohesion and reference—is not disregarded here but simply commented on to show that Med-E-Pops are not informal mistranslations (Gallardo 2005) of Med-RAs. Contrary to Giunchi's (2002) study on web-posted accounts (see section 1.3.3), this piece of research supports Nwogu's (1991) seminal study when stating that there is a canonical format in medical research reports written by specialised journalists or medical personnel and published in popular science on-line journals—Nwogu's study (1991) focused on popular science magazines and not websites. For Giunchi (2002), even web-account titles created a mystified version of the original source that may mislead readers. On the other hand, in this dissertation's understanding, the titles of Med-E-Pops show strategic linguistic adaptations that clarify the content of the Med-E-RA adapted in the Med-E-Pop. Med-E-Pops titles aim to be simply a synthesis of the Med-E-RA content and not an emotive suggestion that a magic cure is just about to be found (see Appendix 3). The titles of Med-E-RAs are longer (almost double the number of words) and more complex than those selected for Med-E-Pops which are syntactically simpler and semantically clearer. The titles of Med-E-Pops tend to use concrete nouns, finite verbs that make reading and understanding easier. Med-E-RAs titles use abstract nouns, grammatical metaphors and agentless constructions that avoid researchers' commitment and boost research objectivity. See for example:

(27) Comparing the Quality of the Suture Anastomosis and the Learning Curves Associated with Performing Open, Freehand, and Robotic-Assisted Laparoscopic Pyeloplasty in a Swine Animal Model. [Med-E-RA6]

(28) Robot Improves Suture Proficiency More Rapidly for Surgeons Inexperienced in Laparoscopic Techniques. [Med-E-Pop6]

There was only one case in which the name of the Med-E-RA was considerably shorter than its counterpart:

(29) Bone Mineral Density in Estrogen-Deficient Young Women. [Med-E-RA22]

(30) Study Defines Strategy to Protect Bones in Women, Girls with Primary Ovarian Insufficiency. [Med-E-Pop22]

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76 To focus the scope of this dissertation, direct and reported speech are studied in the second part of this chapter (see section 3.5) as a contribution to the study of the concept of the voice of Med-E-Pops writers.



In agreement with Giunchi (2002), web-posted accounts and Med-E-Pops mainly report the views of the authors of the research. One of the distinctive characteristics of Med-E-Pops is the constant use of reporting from Med-E-RAs and from interviews with the authors, introduced by non-evaluative verbs, as will be further explored in the following part of this chapter—when studying the concept of voice of Med-E-Pops writers from the exploration of discourse. To my understanding, the use of this journalistic device engages with the audience by bringing the direct voice of the researchers to the Med-E-Pop. Therefore, the writer of the Med-E-Pop builds trust and objectivity. Nonetheless, just a short comment on cohesion devices is introduced below to get a better definition of Med-E-Pops. Myers stated as early as the 1980s (1986) that adapting Med-RAs into medical popularizations means breaking down RAs sentences into simpler ones. These sentences are linked by simple coordinating conjunctions that enable an easy narrative suitable to be understood by a wide and varied audience. See for example:

(31) A large study of the pills used to induce abortion has found that infections are rare but can be made even less common if the pills are taken by mouth instead of vaginally, and with antibiotics. **But** it is not clear whether the findings will change medical practice. Abortion providers and other experts had different reactions to the study. [Med-E-Pop23]

In other words, Med-E-Pops writers use cohesive devices to enhance coherence for any type of reader. For instance, whereas Med-E-RAs seek impersonality, Med-E-Pops display a wide use of noun groups, which make nominal reference to *they* and thus reinforce the researchers' professional prestige. See for example:

(32) And it also cut the risk of developing Alzheimer's disease if cognitive impairment was already present, said study lead author **Dr. Nikolaos Scarmeas, an assistant professor of neurology at Columbia University Medical Center in New York City**. [Med-E-Pop16]

### 3.1.3 Concluding remarks

The purpose of this section was twofold. First, this section aimed to determine what type of genre relation existed between Med-E-RAs and Med-E-Pops. Then, it was necessary to establish what this dissertation has distinguished as Med-E-Pops in order to define the context, and therefore define the Med-E-Pops genre, in which the voice of Med-E-Pops writers is explored in this piece of research.

The medical electronic popularizations under study are framed in the ESP tradition (see section 1.2.4) and they are the result of a genre (medical popularizations) in constant evolution due to its adaptation to 21st century society information demands (see section 1.3.1). Therefore, the Med-E-Pops genre should be considered as a dynamic genre that evolves within the socio-rhetorical activity of the community; lay Internet readers and medical personnel. Like Hallin (1997), these results suggest that the rapid increase in Internet users has shaped the evolution of the Med-E-Pops genre itself. This fact, according to Thurman (2007), justifies and shapes the electronic text layout, content and information structure. Also, these electronic and short JRVs versions engage with the reader for short periods of time due to the dynamism and accessibility of the Internet itself. Usually the reader needs to have access with a click of our mouse to some pieces of information that are easily scanned by an average Internet reader. Therefore, this piece of research agrees with Berkenkotter and Huckin's (1993), Kamberelis' (1995), Bateman's (2008) and Knox's (2010) studies by finding that social processes, especially those hosted in the mass media, affect the evolution of genres.

Furthermore, this social and dynamic evolution is speeded up by the rapid pace of the Internet setting. The different e-journals explored in this piece of research (from more field-specialised as *DocGuide* to less field-specific as *the New York Times*) share exactly the same textual and lexico-grammatical conventions. It could be said that this medium enables genre flexibility or, as Bhatia (2002) puts it, its versatility—since these popular texts may appear in different types of electronic publications from hospital webs to newspapers. The sender-view conceptualisation of Med-E-Pops and their communicative intention enhance the resulting combination of structure and discourse. The resulting hybrid pattern of Med-E-RAs adaptation process for an Internet lay audience makes this dissertation conclude that Med-E-Pops are embedded in the colony of medical genres—even being considered as an evolution and adaptation of medical electronic journalistic reported versions (Nwogu 1991). The new characteristic of this “crossbred genre” (Med-E-Pops genre) compared to medical popularizations or what Nwogu called JRVs is that the medium, that is the Internet, shapes their textual conventions and also reaches a broader and competent audience.<sup>77</sup> This globalised audience use these texts that deal with newly Med-E-RAs medical findings because of their clarity, shortness and reliability.

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77 This readership is considered as competent in this section since they have some command of English and ICTs in order to reach and read the information displayed in e-journals.

Having observed this previously mentioned contrastive and qualitative analysis between Med-E-RAs and Med-E-Pops genre relations, it is inferred that Med-E-Pops are better understood within their production context (Devitt 1991, 1994). In this context of Med-E-Pops production there are elements of paramount importance. The first one is the social role of potential readers as recipients and electronic information consumers of a two-dimensional genre model (see Askehave and Nielsen's 2005 approach in section 1.2.5.1). In other words, Med-E-Pops are formulated by browsing and disseminated through a dynamic, electronic channel. Therefore, these texts are reached electronically and some parts of the texts (see section 1.2.3) are intentionally hyperlinked to lead readers to a different dimension, the dimension of the Med-E-RAs source of the reported research. Thirdly, this discussion indicates that Med-E-Pops are members of the medical genre colony because the form and functions of Med-E-Pops are rearranged—compared to their source texts, Med-E-RAs—in order to meet the Internet readers' expectations. The adaptation of Med-E-RAs electronic and popular versions' move structure, lexicogrammatical features and scientific content respond to readers' needs. Therefore, the Med-E-Pops genre exists because the members of the community, lay readers, accept it in their reading practises.<sup>78</sup>

Contrary to some criticisms about the misinformation role or informality of popular texts (see section 1.3) it should be noted that all the e-journals studied in this piece of research include a section on their home page in which they explain why the reader should trust the information displayed. It is there that we can read about the willingness of editorial policy, as independent sources of medical knowledge dissemination, to inform about the newest medical findings with scientific rigour. It is then recognisable that the old genre (Med-RAs) and the new genre (Med-E-Pops) differ, but the latter has emerged as a new conjunction of form and purpose that is reorganised for the sake of the new community's understanding.

Having determined the context of the Med-E-Pops genre, I will now define what in this dissertation I have conceptualised as Med-E-Pops. Med-E-Pops are professional medical reports written by specialised journalists or medical personnel and published in specialised electronic journals or online newspaper health sections. Med-E-Pops could be considered as the electronic evolution of popular medical texts such as Nwogu's JRVs but with one extra constraint: the

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78 Although this electronic genre is initially aimed at lay readers, practitioners also recognise the emergence of this genre at varying degrees as shown in the survey-based approach (see Chapter 2).

Internet as the medium of publication. For instance, Med-E-Pops have to leave specific medical information out of the Med-E-Pop due to the influence of the Internet constraints mentioned above. These shorter medical popular texts with a word average number of 546 words display, contrary to some studies such as Giunchi's (2002), Gil-Salom's (2000) or Gallardo's (2005), a canonical internal information order and moves structure. Med-E-Pops focus on the object of study whereas their counterparts Med-E-RAs are concerned with the research process. This fact does not imply that these popularised texts display poorer scientific rigour since the content has been mediated or translated to be widely understood and easy to interpret. Besides, thanks to constant references to Med-E-RAs and hyperlinks, readers can map information and meaning while understanding what the research is about through the adaptation of the text structure, the medical content and the medical discourse. Contrary to some traditional approaches to medical popularizations (Gil-Salom 2000), Med-E-Pops seek clarity and objectivity as they are designed to address a wide range of professionals, ranging from doctors to educated and un-educated readers around the world. They do not aim to misinform or mislead readers with commercial intentions but to inform their potential audience in a quick and reliable way. It should not be overlooked that the high demand of this broad readership spectrum with a potential wide variety of cultural, professional and personal backgrounds has inspired e-journals to come to a generic agreement. In other words, the medium and the discourse community (writers and readers) have established and therefore accepted a valid generic evolution of the medical dissemination article or medical popularization. Therefore, Med-E-Pops have to follow a journalistic format (Funkhouse *et al.* 1970) while being easy to read and access since they are hosted on the Internet.

In general, the interpretation of the textual evidence shows that in this new member of the medical genre colony there is a canonical information structure due to its mirroring of its Med-E-RAs counterparts. Needless to say the narrative of these information structures is constrained by the medium of publication and the mass media readers' expectations. Therefore, the purpose of each move is to clearly show who did what, why, when and how.<sup>79</sup> It is the marriage of

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79 Also, in their attempt to build trust about the research and the Med-E-Pop itself, Med-E-Pops writers depersonalised their texts depriving them of their own voices, as will be explained in the second part of this chapter, in order to denote objectivity and formality regarding the Med-E-Pops genre.

Med-E-Pops genre and the realisation of the writers' voices that builds trust not only about the research but also about the genre under study. Therefore, to observe how the writers' voices contribute to the positive conceptualisation of Med-E-Pops, the second part of this chapter analyses the lexico-grammatical realisations of these writers' voices. Finally, this new combination of form and content, identified in this dissertation as Med-E-Pops, is not a threat against the canonical order or scientific content of Med-RAs but an opportunity to share reliable medical knowledge within an international and wide-ranging electronic audience.

### **3.2 ANIMATE AGENTS + ACTIVE VERBS**

In the first part of this chapter, I have analysed the context or background of Med-E-Pops in order to explore to what extent Med-E-Pops are the evolution of Med-E-RAs. This analysis revealed the need to consider the rhetorical strategies used in a given text in order to study the genre these texts belong to. For the sake of clarity, I have decided to introduce the results from the lexico-grammatical features analysis in four separate sections since they are interpreted in this dissertation through the concept of voice. The discussion of these results has a dual objective. Firstly, it aims to show how the lexico-grammar explored in the corpora (Med-E-RAs corpus and Med-E-Pops corpus) is used to conceal the Med-E-Pops writers in newly published electronic journalistic versions of Med-RAs on specialised websites—studied in this piece of research. Secondly, it also aims to shed light on the contextualisation and definition of the Med-E-Pops genre by tracing this approach to the concept of voice and back to genre (see section 3.1.2).

To conceptualise voice and to justify the theoretical background of this piece of research I reviewed CDA studies in Chapter 1 to reflect on how discourse is embedded in certain power and social relations. It is social demand that encourages the creation of different channels to disseminate scientific knowledge among a potential lay audience on the Internet. To this dissertation's understanding, Med-E-Pops should not be understood as simple Med-E-RAs reformulations that aim to sell lab products or disseminate certain health care ideas with commercial intentions. As the first part of this chapter discusses, Med-E-Pops should be understood as the answer to an increasing social demand for reliable, objective and easily accessible medical information. At the beginning of this study I also stated that although this piece of research is not based on a corpus

methodology, it is a corpus-driven study based on the contrastive exploration of two corpora; Med-E-Pops and Med-E-RAs. This corpus gathering and contrastive analysis was needed to scientifically justify this dissertation based on linguistic evidence. To interpret the resulting data from the corpora contrastive study I used SFG (systemic functional grammar), as introduced in Chapter 2, to explore the linguistic features used by writers in Med-E-Pops, which help readers in their process of mapping language and meanings. I also used genre studies to contextualise the linguistic findings in the medium of production. One of the research questions of this piece of research was to explore whether the medium and especially the genre (medical popularizations published on the Internet) may constrain the visibility of the writers of the Med-E-Pops. Therefore, once the theoretical context and the relation between evolving genres, electronic genres and electronic medical popularizations was established in the first part of this chapter, I turned to the main research question of this dissertation, the study of the concept of voice in Med-E-Pops.

Accordingly, as introduced in section 1.4.2.3 and developed in Chapter 2, this section deals with the contrastive analysis of the most representative lexico-grammatical features regarding writers' voice in Med-E-RAs and Med-E-Pops. The following sections discuss the contrastive results of the analysis of writers' voice according to the cline of visibility justified in both Chapters 1 and 2. That is, animate agents + active verbs (section 3.2), passive constructions (section 3.3), active verbs with inanimate subjects (section 3.4) and reporting sequences (section 3.5). Table 15 summarises the overall results:

<i>Lexico-grammatical variables studied</i>	<i>Med-E-RAs</i>	<i>Med-E-Pops</i>
First person pronouns (animate agents)	1,165 (6.39)	0
Noun phrases that refer to the Med-E-RAs researchers	0	77 (3.52)
Passive constructions	2,912 (15.99)	122 (5.58)
Inanimate subjects (or abstract rhetors)	327 (1.79)	104 (4.76)
Reporting sequences	27 (1.23)	229 (10.48)

Table 15. *Lexico-grammatical features studied. Total number of tokens and normalised results per 1,000 words.*

All these sections begin by introducing the results discussed in Med-E-RAs. Considering this Med-E-RAs starting point, I have included a subsection dealing with the results obtained in the Med-E-RAs and Med-E-Pops comparison process. Finally, a subsection of concluding remarks closes each section.

As introduced in Chapter 2, an agent followed by an active verb is considered in this dissertation as the most visible realisation of a writer's voice. Therefore, this piece of research firstly used the study of self-mentions in Med-E-RAs since they provide evidence of the most personal authorial voice. Section 3.2.2 deals with the degree of authors' presence in Med-E-Pops. That is, since no self-mentions were found in the Med-E-Pops corpus, this section explores what lexico-grammatical features may provide evidence of the most personal authorial voice and whose authorial voice is created by the use of this lexico-grammar. Finally, section 3.2.3 draws conclusions from the Med-E-RAs and Med-E-Pops contrastive analysis.

### 3.2.1 Animate agents + active verbs in Med-E-RAs

In my Med-E-RAs corpus, researchers claim the authorship of their work and the ownership of their findings using self-mentions as exemplified below. Only exclusive pronouns were considered in my analysis since they exclude from these self-mentions every participant who is not a member of the research team. Moreover, only plural forms were found since all the Med-E-RAs were co-authored as mentioned in Chapter 2. See for example:

(33) Similarly to **our** previous findings, in this different AD population **we** observe that higher adherence to the MeDi is associated with reduced disease odds. Similarly to **our** previous report, **we** note a gradual reduction in AD risk for higher tertiles of MeDi adherence, suggesting a possible dose-response effect. [Med-E-RA16]

(34) Finally, as with all observational studies, **our** data do not allow **us** to infer the direction of causality between negative religious coping and well-being. In addition, although several studies have demonstrated that religious coping generally has a direct association with well-being, it is possible that another, unmeasured variable (e.g., hopelessness) mediates this relationship. [Med-E-RA31]

The tokens found represent the authorial voice of the researchers—making their presence more visible in the texts—by means of the three morphological units under study:

<i>we</i>	<i>us</i>	<i>our</i>	<i>Total</i>
763 (4.9)	12 (0.06)	390 (2.14)	1,165 (6.39)

Table 16. *Use of pronouns as authorial markers. Total number of tokens and normalised results per 1000 words.*

These results show that the use of the first person plural pronoun *we* and the possessive adjective *our* are the most common authorial devices whereas the frequency of object pronoun *us* is very low. By way of illustration some examples from the Med-E-RAs corpus are included below:<sup>80</sup>

(i) *we*:

(35) Table 5 shows the results of the Cox regression analysis for the QDScore. After adjustment for all other variables in the model, **we** found significant associations with risk of type 2 diabetes in both men and women for age, body mass index, family history of diabetes, smoking status, treated hypertension, use of corticosteroids, diagnosed cardiovascular disease, social deprivation, and ethnicity. **We** therefore included these variables in the final model and risk prediction algorithm. [Med-E-RA5]

(36) In particular, for the pre-radiation topology, **we** were able to separate the ancestral sex chromosome branch (preceding the boreoeutherian divergence) into X- and Y-specific portions (labeled Ancestral X and Ancestral Y, respectively, Figure 2A) and to delineate the eutherian proto-sex chromosome branch (labeled Proto-Sex, Figure 2A), preceding the Y chromosome inversion that led to formation of stratum 3. [Med-E-RA30]

(ii) *our*:

(37) **Our** population of patients undergoing cardiothoracic surgery was markedly different from those of prior studies investigating the relationship between PFO and stroke. Many patients in **our** study had comorbid conditions and risk factors for stroke, while past studies have chosen randomly selected healthy subjects or subjects with a history of ischemic stroke. [Med-E-RA24]

<sup>80</sup> As mentioned in Chapter 2; titles, abstracts, acknowledgements, bibliographical references and notes have been removed from the Med-E-RAs corpus. They are taken to be independent members of a constellation of genres around the RA (Swales 2004; Bhatia 2004). Also, in the examples quoted here Vancouver medical citations have been deliberately removed.



(38) **Our** objective is to inform crucial decisions now, until these trials are reported, by using a model-based analysis to examine treatment strategies with different ART initiation thresholds in South Africa. [Med-E-RA36]

(iii) **us**:

(39) The anastomotic time represented a more objective measurement of the degree of difficulty, allowing **us** to more directly compare the three techniques. [Med-E-RA6]

(40) The detailed histological information contained in the Danish Cancer Registry and the Danish Registry of Pathology, in combination with the large number of cases of ovarian cancer in our cohort, enabled **us** to analyse potential differences in risk according to histological subtype. [Med-E-RA26]

The 763 tokens of the plural pronoun *we* were recorded in 38 of the articles comprising the Med-E-RAs corpus. 2 Med-E-RAs showed no instances of the first person plural subject pronoun *we* or the possessive adjective *our* for that matter (Med-E-RA11 and Med-E-RA13). Only 12 tokens of the object pronoun *us* were recorded. This low figure (0.06 per 1000 words) reveals that our Med-E-RAs writers favour the use of other realisations when making themselves visible in their texts—that is, the use of *we* and *our*. Moreover, the fact that the 6 instances were found in Med-E-RA30 may also reveal idiosyncrasies and stylistic choices on the part of the writers.

As for the use of *our*, no instances of this possessive adjective were found in Med-E-RA11. However, 39 Med-E-RAs did include instances of *our*. In other words, almost all of the Med-E-RAs share the use of this authorial device to make authors visible in Med-E-RAs. In all, the frequency of use of both *we* and *our* is remarkable in the corpus under study. These results indicate that most of the Med-E-RAs researchers project their authorship and visibility in their RAs by means of personal pronouns and the possessive adjective. It could be inferred that Med-E-RAs researchers prefer the use of these morphological units with the function of subject or adjective, which explicitly show the agency of the research. Med-E-RAs researchers do not use self-mentions as morphological objects of a verbal process since it is the researchers themselves who carry out these actions.

As mentioned in the introduction to this dissertation, the scope of this piece of research is to examine the concept of voice concerning Med-E-Pops writers.

Since the rhetorical and information structure of Med-E-Pops, drawn from Med-E-RAs, is manipulated and therefore adapted to a lay audience, according to the communicative purpose of this set of texts, a contrastive study of the self-mentions occurrence per moves has not been considered here. The following subsection explores how Med-E-Pops mirror their counterparts when portraying the most visible claim of visibility found in the Med-E-Pops corpus: animate agent + active verb.

### **3.2.2 Animate agents + active verbs in Med-E-Pops**

I now turn to introduce the lexico-grammatical features in Med-E-RAs that are transformed into noun phrases that refer to Med-E-RAs researchers in Med-E-Pops. In the previous section it has been pointed out that in this dissertation *we*, *our* and *us* have been considered as the most representative feature in the cline of authors' visibility in Med-E-RAs.

In the Med-E-Pops corpus, no self-mention tokens were found. The contrastive data analysis suggests that Med-E-Pops writers choose to report medical issues in such a way that writers make themselves invisible in order to promote researchers' visibility. In other words, Med-E-Pops writers do not self-represent themselves. To do so, Med-E-Pops writers do not mention themselves anywhere in their texts or try to engage with the reader manipulating or guiding readers' attention towards any point in particular. Med-E-Pops writers only portray the authorship of the Med-E-RAs researchers. It should not be forgotten that although Med-E-Pops writers attempt to produce an inaudible voice, they still portray their voice by selecting some linguistic devices instead of others. This interpretation is based on a deep contrastive analysis of the corpora.

The following instances aim to show that Med-E-Pops writers transform the self-mentions—among other lexico-grammatical features mentioned further in this subsection—used in Med-E-RAs into noun phrases followed by active verbs that clearly state who the person directly responsible for the research process is, as exemplified below:

<i>Med-E-RA3</i>	<i>Med-E-Pop3</i>
(41) Furthermore, <b>we found that</b> its expression was MyD88-dependent when cells were stimulated with LPS or Mtb. Genetic variation leading to the loss or alteration of CCL1 function may influence the ability of T cells, monocytes and dendritic cells to migrate to the site of infection, aggregate into granulomas and develop an effective immune response. This may result in inadequate containment of the bacterium and allow unimpeded bacterial growth leading to pulmonary disease.	Using this method, <b>the authors showed</b> that the inflammatory mediator CCL1 is specifically associated with host susceptibility to pulmonary TB.

Results from the contrastive analysis of Med-E-RAs and Med-E-Pops suggest that noun phrases that referred to the researchers in Med-E-Pops mainly replaced the self-mentions used in Med-E-RAs. These noun phrases found in Med-E-Pops convey the presence of Med-E-RAs researchers by using a general noun as a phraseological nucleus that establishes a lexical reference with the authors of the medical research. However, it should be noticed that not all the noun phrases that referred to the Med-E-RAs researchers followed by active verbs were always originated by self-mentions back in Med-E-RAs. 48% of these noun phrases followed by active verbs found in the Med-E-Pop were originated by impersonal lexico-grammatical features different from self-mentions.<sup>81</sup> These linguistic features were: syntactic subjects that are fake agents, passive constructions, abstract rhetors and one instance of an existential *there*. Some examples, shown below, aim to illustrate this transformation process from Med-E-RAs into Med-E-Pops:

81 I use the term *percentage* rather than the normalised number of words per 1,000 because it gives a more globalised, clearer idea of the overall development of the different parts into a whole entity.

<i>Med-E-RA5</i>	<i>Med-E-Pop5</i>
<p>(42) <b>We present</b> the derivation and validation of a new risk prediction algorithm for assessing the risk of developing type 2 diabetes among a very large and unselected population derived from family practice, with appropriate weightings for ethnicity and social deprivation.</p> <p><b>We designed the algorithm</b> (the QDScore) so that it would be based on variables that are readily available in patients' electronic health records or which patients themselves would be likely to know—that is, without needing laboratory tests or clinical measurements—thereby enabling it to be readily and cost effectively implemented in routine clinical practice and by national screening initiatives.</p>	<p><b>British scientists have developed</b> an online tool for predicting your risk of developing adult-onset diabetes</p>

<i>Med-E-RA32</i>	<i>Med-E-Pop32</i>
<p>(43) A complete description of the cohort and study design is presented elsewhere. Briefly, black and Dominican- American women who resided in Washington Heights, Harlem, or the South Bronx in New York, New York, <b>were recruited</b> between 1998 and 2003, through local prenatal care clinics, into a prospective cohort study.</p>	<p>To assess the impact of PAH exposure in the womb, <b>the authors conducted</b> air monitoring between 1998 and 2003, during the pregnancy of 249 black and Dominican-American mothers in the Washington Heights and Harlem areas of New York City.</p>

<i>Med-E-RA11</i>	<i>Med-E-Pop11</i>
<p>(44) <b>The results of this study indicated</b> that a brief (6- to 8-session) family-based preventive intervention reduced the 1-year incidence of anxiety disorders and significantly reduced levels of anxiety symptomatology in the offspring of parents with anxiety disorders.</p>	<p>In what is believed to be the first U.S. study designed to prevent anxiety disorders in the children of anxious parents, <b>researchers at the Johns Hopkins Children's Center have found</b> that a family-based program reduced symptoms and the risk of developing an anxiety disorder among these children</p>

The distribution of the lexico-grammatical structures found in Med-E-RAs that are transferred to Med-E-Pops as noun phrases followed by an active verb is summarised in the following table:

Lexico-grammatical structures found in Med-E-RAs that are transferred to Med-E-Pops as noun phrases followed by an active verb	Number of tokens and percentage	Normalised result per 1,000words
We + active verb	40 (51.94%)	1.83
Syntactic subject as a fake agent of the process	17 (22.07 %)	0.76
Passive constructions	13 (16.88%)	0.58
Abstract rhetors	6 (7.79%)	0.27
Existential there	1 (0.77%)	0.04
Total	77	3.48

Table 17. *Med-E-RAs lexico-grammatical structures transformed into noun phrases that refer to researchers in Med-E-Pops (total number of tokens, percentage and normalised results per 1,000 words).*

These results may suggest that Med-E-Pops writers do not create a direct connection with the researchers' visibility. Therefore, these writers depersonalise their texts by reproducing the researchers' visibility in the new Med-E-Pop. Therefore, writers hide their visibility behind the scientists' lexical reference as shown above. In other words, Med-E-Pops writer not only transfer *animate agent + active verb* structures into noun phrases that refer to Med-E-RAs researchers (see example Med-E-Pop5 mentioned above) but they also decide to transform other lexico-grammatical features used by the Med-E-RAs researchers into a more personal reference to the researchers of Med-E-RAs, as shown in Med-E-Pops 2, Med-E-Pops 11 and Med-E-Pops 32.

Table 17 shows that almost 23% of the noun phrases found in Med-E-Pops originated from syntactic subjects in the Med-E-RAs corpus and could be classified according to Downing and Locke (2002) as fake agents (see Chapter 2). A further reference is later made in this discussion of results to these writers' reflections on the verbal process or patterns of experience that follow the nominal groups found in the Med-E-Pops corpus. An example is included below to illustrate this point:

<i>Med-E-RA1 study</i>	<i>Med-E-Pop1</i>
(45) For this analysis, we disregarded CP as an outcome and combined our cohort of 443 CP cases and 883 controls (total 1326) before separating them on the basis of APOs. <b>A total of 717 of the 1326 babies (54.1%) met</b> the following selection criteria for cases. Some cases had more than one condition: [...]	<b>Researchers</b> compared 609 normal pregnancies with 717 that had one or more of four adverse outcomes: premature birth, small for gestational age, bleeding during pregnancy or pre-eclampsia.

In the example Med-E-RA/Pop1, researchers could have said; “We selected 712 of 1326 babies according to the following criteria”. It can be clearly seen that the syntactic subject of the Med-E-RA is not the semantic subject or agent of the process (see Chapter 2). It may seem that the subject is potentially affected by an involuntary process. It is then the Med-E-Pop writer who transfers that fake agent or depersonalised structure demanded by the rhetorical conventions of the RAs genre into a personal and direct material process that simplifies both the Med-E-Pops syntactic structures and semantic comprehension. The same reflection could be extended to the example Med-E-RA/Pop2 displayed above. Table 17 shows that the following lexico-grammatical structure used in Med-E-RAs (in terms of frequency) that is found to be personalised in this Med-E-corpus is the use of the passive. 13 tokens have been found in the Med-E-Pops corpus. In other words, 16.88% of the noun phrases that represented the Med-E-RAs researchers in Med-E-Pops were originated in the Med-E-RA corpus by passive constructions. In these structures the real agent is inferred and somehow present since it is not mentioned but easily deduced—as is further discussed in depth in section 3.3. In Med-E-RAs the agents of the research processes are not introduced because the rhetorical conventions of the medical genre lead researchers towards the use of agentless constructions as exemplified below:

<i>Med-E-RA40</i>	<i>Med-E-Pop40</i>
(46) <b>Data were collected</b> retrospectively or prospectively on all patients with 2009 influenza A(H1N1)-related critical illness admitted to the ICU between April 16 and August 12, 2009. Research ethics board approval was granted by Sunnybrook Health Sciences Centre as the central coordinating center on April 30, 2009, and by each participating local research ethics board.	<b>Anand Kumar, MD, Health Sciences Centre and St. Boniface Hospital, Winnipeg, Manitoba, and colleagues with the Canadian Critical Care Trials Group H1N1 Collaborative</b> conducted an observational study of critically ill patients with influenza H1N1 in 38 adult and paediatric intensive care units (ICU) in Canada between April 16 and August 12, 2009.

Another lexico-grammatical structure used in Med-E-RAs that has been personalised in the transferring process or adaptation from Med-E-RA into Med-E-Pop was the use of abstract rhetors or inanimate subjects followed by active verbs—studied in depth in section 3.4. 6 instances (almost 8% of total number of tokens) show how a RA lexico-grammatical convention such as the use of non-animated nouns carrying out human research processes by means of active verbs are personalised as well by the Med-E-Pops writers as shown in the following example:

<i>Med-E-RA28</i>	<i>Med-E-Pop28</i>
(47) Pediatric solid malignancies display important angiogenic potential, and blocking tumour angiogenesis represents a new therapeutic approach for these patients. <b>This is the first report evaluating circulating endothelial cells</b> , bone marrow derived (BMD) endothelial progenitor cells, and angiogenic plasma proteins in the peripheral blood of patients with pediatric solid malignancies. We observed that strikingly high levels of BMD endothelial progenitors correlated with metastatic disease. <b>These results support and extend recent preclinical findings indicating</b> that these cells may play a pivotal role in metastatic disease progression.	<b>While the researchers were not surprised to detect</b> circulating endothelial cells and endothelial progenitor cells in paediatric patients, <b>they were surprised</b> to find these cell levels were significantly higher in patients with metastatic disease compared with levels found in healthy participants

I have considered the recurrence of the only instance of *existential there* meaningless, due to its low frequency that may resemble a collocation, which responds to the rhetorical conventions of the Med-RA genre:

<i>Med-E-RA17</i>	<i>Med-E-Pop17</i>
(48) Thus, <b>there was no evidence</b> that the serotonin transporter genotype alone or in interaction with stressful life events is associated with an elevated risk of depression in males alone, females alone, or both sexes combined. The only significant finding across studies was the potent association of stressful life events with the risk of depression.	<b>The authors reanalyzed</b> the data and found “no evidence of an association between the serotonin gene and the risk of depression,” no matter what people’s life experience was, Dr. Merikangas said.

These results suggest that Med-E-Pops writers try to preserve the Med-E-RAs authorial visibility in the Med-E-Pops by translating the self-mentions used by the Med-E-RA authors into noun phrases that make a lexical reference to the researchers. Furthermore, there was a balance between this process of *visibility transfer* from Med-E-RAs self-mentions and the transformation of other lexico-

grammatical structures mentioned above. That is, 52% of the total number of nouns that refer to the Med-E-RAs researchers found in the Med-E-Pop corpus came from self-mentions in the corresponding Med-E-RAs, and the remaining 48% originated in other lexico-grammatical structures (syntactic subjects such as fake agents, passive constructions, abstract rhetors and existential *there*). Therefore, it can be stated that Med-E-Pops writers chose to personalise and activate the researchers' visibility in Med-E-Pops even when the same researchers had decided to use impersonal lexico-grammatical structures in their own Med-E-RAs, as is the case in 48% of the instances discussed above. By doing this, Med-E-Pops writers emphasise the fact that the real actors of the research process reported in the Med-E-Pops are the Med-E-RAs researchers and not themselves as Med-E-Pops writers.

Turning the attention to these noun phrases followed by active verbs, disregarding their original lexico-grammatical realisation in Med-E-RAs, it should be noticed that in the Med-E-Pops corpus noun phrases are the most direct illustration of the Med-E-RAs researchers' visibility in Med-E-Pops. Therefore, as stated above, after observing and analysing the texts included in the corpora I decided to explore the noun phrases that referred to the researchers followed by active verbs in Med-E-Pops since the verbal processes ratify the Med-E-RAs researchers' visibility in the Med-E-Pops. Also, it became essential during the corpus-driven analysis to study the research acts that accompanied or followed these noun phrases as originally planned in this methodology for the exploration of the passive constructions (see Chapter 2 and the analysis of passive constructions in section 3.3). The following examples are included here to illustrate the starting point:

<i>Med-E-RA15</i>	<i>Med-E-Pop15</i>
<p>(49) <b>We used a two-stage screening process</b> to define the prevalence and characteristics of mental disorders in Shandong, Zhejiang, and Qinghai provinces, and in a prefecture of Gansu province (Tianshui prefecture). We identified 363 primary sampling sites in the four provinces using multistage stratified random sampling methods (panel 1; figure). 66 554 individuals aged 18 years or older were identified with simple random selection methods in these sites, and 63 004 (95%) completed the first-stage screening assessment.</p>	<p>To do the study, published in the journal <i>Lancet</i> last week, <b>researchers</b> at Columbia University and major psychiatric hospitals in Beijing, Shandong, Zhejiang, Qinghai and Gansu <b>screened 63,000 adults</b> with questionnaires, and psychiatrists interviewed more than 16,000 of them, often in local dialects.</p>



<i>Med-E-RA26</i>	<i>Med-E-Pop26</i>
(50) <b>Follow-up is needed</b> as many of the women in the cohort have not yet reached the peak age for ovarian cancer.	<b>The scientists cautioned</b> that the women in the study would have to be followed for many more years to see if their risk increased over time. The mean age for diagnosis of ovarian cancer in women is 63.

In this subsection, those nouns that act as a nucleus of what explicitly refers to the Med-E-RAs researchers are described and classified—regardless of their original lexico-grammatical structure in Med-E-RAs—into two different categories to observe whether this classification may cast light on the issue of Med-E-Pops writers’ visibility. In the Med-E-Pops corpus there were no traces of first person plural personal pronouns, object pronouns or possessive adjectives capable of representing the Med-E-Pops writers—as mentioned at the beginning of this section. What is found instead is the use of noun phrases that refer to Med-E-RAs researchers as (i) general nouns, a nucleus of the noun phrase that substitutes Med-E-RAs researchers, and (ii), as personal references to the scientists’ names, the name of the lead researcher and a reference to *his/her* colleagues or the cohesive use of the personal pronoun *they*, thereby establishing a cohesive reference to the researchers (see cohesion and coherence in Halliday and Hasan 1976). These tokens were studied separately to observe whether a distinction between general nouns and nouns with personal reference to the researchers was meaningful to draw further conclusions on the research questions posed in this dissertation. These linguistic units are the syntactic subjects of an active voice verb, which represents an action carried out by the Med-E-RAs researchers. Here some examples are included to illustrate the classification inferred from the analysis of the Med-E-Pop corpus:

(i) General nouns that refer to the Med-E-RAs researchers:

(51) **The scientists tested** each baby’s blood within five days of birth for the DNA or RNA of eight different viruses, including five strains of herpes. [Med-E-Pop1]

(52) **The authors propose** that this is key to maintaining graft viability in the long-term. [Med-E-Pop8]

(53) **The researchers found** that a total of 168 patients had confirmed or probable H1N1 infection and became critically ill during this time period, and 24 (14.3%) died within the first 28 days from the onset of critical illness. Five more patients died within 90 days. The average age of the

patients with confirmed or probable influenza H1N1 was 32.3 years, 113 were female (67.3%), and 50 were children (29.8%). [Med-E-Pop40]

(ii) Use of proper names:

(54) To find out, **he and his colleagues recruited** 41 volunteers with a history of large local reactions to insect stings. Many of the volunteers were subject to unavoidable frequent stings owing to outdoor jobs or hobbies. From that group, **Golden selected** those whose reactions were marked by extremely large swellings of at least 16 cm—about the size of a football—and winnowed out those who couldn't commit to evaluations that involved live insect stings or the rigorous study schedule. [Med-E-Pop18]

(55) **Richard A. Krasuski, MD, Cleveland Clinic, Cleveland, Ohio, and colleagues examined the prevalence of PFO incidentally discovered** during cardiothoracic surgery and investigated the relationship of repair on outcomes and long-term survival. [Med-E-Pop24]

(56) In the new study, **Dr. Richard Sherman and Dr. Ojas Mehta** from the University of Medicine and Dentistry of New Jersey, Robert Wood Johnson Medical School, **looked at the potassium** and phosphate content in “enhanced” and additive-free meats and poultry from area supermarkets. [Med-E-Pop34]

As regards the overall results, a total number of 77 tokens (3.52 when normalised per 1,000 words) were found in the Med-E-Pops corpus. The tokens found contribute to the projection, and therefore visibility, of the authorial presence, of the Med-E-RA researchers in the Med-E-Pop texts. Table 18 illustrates the distribution of each realisation along the corpus:

<i>The researchers</i>	<i>The authors</i>	<i>The scientists</i>	<i>Proper name and a reference to the research team</i>	<i>Total</i>
40 (1.83) 51.94%	10 (0.45) 12.98%	4 (0.18) 5.19%	23 (1.05) 29.87%	77 (3.52)

Table 18. *Use of noun phrases in Med-E-Pops referring the Med-E-RAs authors. Total number of tokens, normalised results per 1000 words and percentages of the total of nouns frequency.*

These data also show that the use of *the researchers* and the use of the proper name of the lead researcher followed by an active verb in the most recurrent authorial marker. The 77 tokens of authorial reference to the Med-E-RAs researchers were recorded in 38 Med-E-Pops. Therefore, only two Med-E-Pops

showed no instance of personal reference to the Med-E-RA author (Med-E-Pop7 and Med-E-RA14).

(i) As for *general noun phrases that refer to the Med-E-RAs researchers*, 40 tokens of the noun phrase *the researchers* were recorded in the Med-E-Pops corpus. This figure (1.83 per 1,000 words) reveals that Med-E-Pops writers favour its use. It seemed at first interesting to consider the three nouns—the researchers, the authors and the scientists—under a single category; under the umbrella term of general noun phrases that refer to the Med-E-RAs researchers. This decision was made inspired by the observation of the results in context. However, I have included below the distribution later made for the research findings. The noun *researchers* is more recurrent because it is the noun that best describes the people who carry out the *research process*. It can be considered that the two other nouns found in the corpus have been used as synonyms of the noun *researchers*. The distribution of these 54 tokens (2.46 per 1,000 words) can be found in 32 Med-E-Pops. 20 Med-E-Pops only used these general nouns and the remaining 12 Med-E-Pops combined the use of these nouns with a reference to the proper name of the Med-E-RAs researchers.

(ii) *Proper names*. The 23 tokens (1.05 per 1,000 words) of the noun phrases naming the *lead researcher* and *his/her team* or *colleagues* were found in 18 Med-E-Pops. 6 Med-E-Pops only used proper names or personal references to refer to the researchers.<sup>82</sup> The remaining 12 Med-E-Pops, as mentioned above, combined the use of the general nouns that refer to the Med-E-RAs researchers, and the name of the lead researcher plus a reference to the rest of the team without naming them.<sup>83</sup> This use of lexical reference highlights the visibility of the researchers against the Med-E-Pops writers' visibility. A contrastive example has been included here by way of illustration:

82 These Med-E-Pops are: Med-E-Pop21, Med-E-Pop25, Med-E-Pop27, Med-E-Pop34, Med-E-Pop36 and Med-E-RA38.

83 Halliday and Hasan's (1976) seminal work *Cohesion in English* is mentioned here to refer to the relations of meaning that exist within a text when using the researchers names and endophoric references to them—previous to the names as anaphoric or following the names as cataphoric. Reference is the cohesive device that is being used in the Med-E-Pops aforementioned tokens.

<i>Med-E-RA21</i>	<i>Med-E-Pop21</i>
<p>(57) <b>We identified</b> 33 articles, 23 of which were published in 1995 or later, that covered 39 study periods<sup>9–41</sup> between 1972 and 2003 (table 1).<sup>42–44</sup> The median mid-calendar year of all studies was 1994. The studies were done in 19 countries in five continents (panel 2). Of the 21 studies that were included in the former review, 11 were excluded from the present meta-analysis because they had a retrospective study design or reported an incidence of SAH that was less than 3 per 100 000. 8739 patients were reported in these studies, 7659 (88%) of whom were in the new studies. 33 studies reported the sex of the patients (5383 [63%] were women). The mean age of all patients was 60 years (data were derived from 29 studies on 8424 patients); the mean age of the men was 55 years, and the mean age of the women was 63 years. The mean age increased from 52 years in the period 1973–1982 to 53 years in the period 1983–1992 and to 62 years in the period 1993–2002.</p>	<p>To answer this question, <b>Dennis Nieuwkamp</b>, MD, University Medical Centre Utrecht, Utrecht, the Netherlands, <b>and colleagues</b> did a meta-analysis of 33 studies involving 8,739 patients from 19 countries in 5 continents between 1973 and 2002. <b>They</b> adjusted the results for confounding factors such as age and sex, and also examined regional differences.</p>

A perception of an existing editorial policy regarding how to mention the researchers of the Med-E-RA source has no foundation here. For instance, the six Med-E-Pops that only mentioned proper names were published on three different websites; three of the Med-E-Pops in *Doc-Guide*, two in *Medical News Today* and one in *HealthDay News*. Other Med-E-Pops from the same e-journals named Med-E-RAs researchers in different ways. This fact suggested that exploring this path would lead me to a dead-end. These instances that potentially represent authorial presence explicitly refer not to the specialised journalist who writes the Med-E-Pops but to *them*, to the academic researchers who wrote the corresponding Med-E-RA. These data suggest that Med-E-Pops writers choose to be less visible by masking themselves behind a narrator presence that brings the voices of the Med-E-RAs researchers into the popularised texts.

I now turn to the verbal acts that follow these noun phrases that refer to the Med-E-RAs researchers in the Med-E-Pops described above. According to Downing and Locke (2002), the observation of the verbal acts, or in this case research processes, aids to map meaning and to unveil what type of process is really being done by whom. I found it to be of paramount importance to observe the type of research process of the verbal acts that accompany or follow these

noun phrases that make lexical reference to the Med-E-RAs researchers. The importance of interpreting these results from this angle lies in the fact that these verbal acts ratify the agency of the research process due to the fact that it is only these researchers who can possibly carry out these research acts. These verbal acts chosen by Med-E-Pops writers indicate the Med-E-RA researchers who conducted the Med-E-RAs, thereby reinforcing the creation of the Med-E-RAs researchers' visibility as explained below and exemplified as follows:

<i>Med-E-RA30</i>	<i>Med-E-Pop30</i>
(58) <b>We observed</b> that immediately following the suppression of recombination between X and Y, likely due to their importance in both sexes, X gametologs largely maintained the ancestral autosomal sequence and functional constraints. In contrast, Y gametologs, as predicted due to absence of recombination [6], evolved under weaker purifying selection than X gametologs. Further, these different rates have been roughly maintained through evolutionary time by each of the sex chromosomes. Both X and Y gametologs, on average, acquired functional constraints stronger than quickly and slowly evolving copies of autosomal paralogs, respectively. This might have contributed to the survival of these gametologs.	<b>Penn State researchers found</b> that the Y chromosome, carried only by males, has evolved at a much more rapid pace than the X chromosome, which is carried by both males and females. The rapid evolution of the Y chromosome has led to a dramatic loss of genes on the chromosome.

I aimed to approach the concept of voice from the constructions of agents followed by active verbs. The data found in the Med-E-Pops corpus led me to use SFL (systemic functional linguistics) approaches to discourse analysis in order to interpret and discuss these findings. Although that angle was introduced in Chapter 2 for the analysis of passive constructions in Med-E-Pops, these results led me to Downing and Locke's (2002) approach. On the basis of Downing and Locke's (2002) approach on how to express patterns of experiences (see Chapter 2), it should be realised that all the verbal processes found in the Med-E-Pops were active verbs that referred to either (i) material processes or processes of doing and causing or (ii) cognition or mental processes. Table 19 below shows the distribution of these results in the Med-E-Pops corpus.

- (I) **University of Iowa researchers studied** 40 drivers with early Alzheimer's disease and 115 elderly drivers with no diagnosis of dementia. [Med-E-Pop4]
- (II) Although **the authors did not reflect** at length on the role of China's economic rise, which has led to mass migrations of poor people to the cities, **they acknowledged that** they were measuring some effects. [Med-E-Pop15]

<i>Material processes</i>	<i>Cognition processes</i>	<i>Total</i>
40 (1.83) 51.94%	37 tokens (1.69) 48.05%	77 (3.52)

Table 19. Total number of processes that followed the noun phrases normalised per 1,000 words and percentage over the total number of instances.

The material processes express an action or an activity, which is typically carried out by a *doer* or agent. 40 instances out of the 77 (1.83 per 1,000 words) tokens of processes were material. These verbal acts simply state what kind of actions and activities the researchers carried out in their research process. Almost 52% (51.94%) of the verbs that followed noun phrases that referred to Med-E-RAs researchers selected by the Med-E-Pops writers portrayed material processes carried out by the medical researchers. The writers explain what scientists did in order to infer their findings. The following example aims to support this:

(59) **Emily T. Martin**, PhD, Children's Hospital Research Institute and the University of Washington, Seattle, Washington, **and colleagues analysed** data from 6 HSV-2 studies to assess the effectiveness of condom use in preventing the virus. [Med-E-Pop25]

Mental processes refer to processes of experiencing and sensing. 37 tokens (1.69 per 1,000 words) out of the overall number of processes found in the Med-E-Pops corpus represented cognitive processes that referred to the research carried out by the Med-E-RAs researchers. These mental processes (48.05% of the total number of tokens) are focused on what has been done. They can be divided into processes of perception (*see, hear, feel*, etc.), cognition (*know, think, believe*, etc.) and affection (*like, dislike, please*, etc.). They share the role of a typical human participant who consciously experiences (*sees, feels, thinks*, etc.). In this Med-E-Pops corpus only tokens of perception and cognition processes were found after the nouns that refer to Med-E-RAs researchers in Med-E-Pops. No distinction has been made between the subcategory *perception* and *cognition*. Actually, almost all the tokens belonged to the latter category.<sup>84</sup> See for example:

84 According to Downing and Locke (2002), relational processes of being and becoming are grouped in English into three types: attributive (*Tom is generous*), circumstantial (*Tom is in the post office*) and possessive (*The car is mine*). I have mentioned relational processes before as the third group of patterns found in the Med-E-Pops corpus when commenting on the results from the analysis verbs after nouns that refer to Med-E-RAs researchers in Med-E-Pops. Downing and Locke also refer to processes of saying and existing that

(60) After adjusting for risk factors, the **researchers concluded** there was no increase in ovarian cancer risk associated with the drugs, nor was there an increased risk for women who underwent 10 or more cycles of treatment or for women who never became pregnant despite treatment. [Med-E-Pop26]

These patterns of experience or verbal processes that followed noun phrases that make lexical reference to the Med-E-RAs researchers were material processes and mental or cognition processes. These processes are, undoubtedly, carried out by the Med-E-RAs researchers. Med-E-Pops writers limit their responsibility to simply reporting what the researchers did and inferred from their research process.

### 3.2.3 Concluding remarks

The starting point for the contrastive analysis of the researchers' and writers' more visible part of the cline was the use of *we (they/the researchers) + active verbs* in their corresponding context (Med-E-RAs and Med-E-Pops). I first realised that in my Med-E-RAs corpus, comprised by 182,065 words, the frequency of use of self-mentions as traces of visibility was 6.39 per 1,000 words whereas in the Med-E-Pops corpus the frequency of the feature that more openly portray visibility (nouns that refer to the Med-E-RAs researchers followed by active verbs) was 3.52 per 1,000 words. This figure is composed of the noun phrases that refer to the Med-E-RAs researchers which originally were self-mentions in Med-E-RAs (51.94% or 1.83 per 1,000 words) and the noun phrases that refer to the Med-E-RAs researchers which in Med-E-RAs were not self-mentions but impersonal constructions (48.06% or 1.69 per 1,000 words). My Med-E-Pops corpus is composed of 21,840 words. It can then be inferred from the discussion of these findings that whereas Med-E-RAs researchers claim their authorship, knowledge and raise concern on their prestige, Med-E-Pops writers make their own voice negligible in order to guide the readers' attention back to the Med-E-RAs authors' presence and to their voices as researchers, authors and discoverers of the medical findings. Therefore, it can be concluded that Med-E-Pops writers have the same interest in preserving the visibility already expressed in Med-E-RAs by the researchers themselves through the use of self-mentions as in personalising and ratifying the researchers' visibility in Med-E-Pops—even though researchers

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will be reintroduced later on in this dissertation in section 3.5 to deal with the analysis of reporting sequences.

decided to use impersonal lexico-grammatical structures in their own Med-E-RAs. This syntactic simplification from impersonal constructions shown in Med-E-RAs to noun phrases that represent the researchers followed by active verbs in Med-E-Pops, facilitates the understanding of the medical content and research narrative.<sup>85</sup> Moreover, this reformulation from impersonal to personal constructions also assists the understanding of whose agency, and therefore visibility, should be perceived. Med-E-Pops writers set out to clarify the idea that the real agents of the research story narrated in the Med-E-Pop are the Med-E-RAs researchers. Therefore, it could be interpreted from these data that Med-E-Pops writers hide themselves behind these lexico-grammatical features in order to contribute to their invisibility while highlighting the Med-E-RAs researchers' visibility. The analysis of the difference between general nouns that refer to the researchers and those that quote the names of Med-E-RAs researchers showed no remarkable differences. This distinction seemed to be meaningless and further conclusions could not be drawn from it.

Finally, it was observed that all these noun phrases that referred to the Med-E-RAs researchers attempted not to enhance the Med-E-Pops writer's visibility but to blur it, by bringing the researchers authorship and therefore visibility to the foreground. These noun phrases are followed by patterns of experience that describe material and mental processes only carried out by the Med-E-Pops researchers. This practice confirms a direct semantic relation between *who did what* in the research process. The balance kept by Med-E-Pops writers between the use of material processes (1.83 per 1,000 words) and the use of mental processes (1.69 per 1,000 words) again does not alter the fact that the real doers and intellectuals of the research are the Med-E-RAs researchers. Therefore, the ones who deserve to be visible in the Med-E-Pops seem to be the researchers and not the Med-E-Pops writers.

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85 Another contribution of this study is to reflect on whether the depersonalisation of Med-E-Pops writers enhances the objectivity and trustworthiness of these texts as vehicles of medical knowledge dissemination. This depersonalisation could be also interpreted as the writers' conscious choice to avoid the projection of their own voice. One of the main foundations to support this hypothesis in the present piece of research is the fact that Med-E-Pops have undergone a process of writers' depersonalisation. This is not because the writers lack personal involvement with what they are writing about. On the contrary, they detach themselves from their own opinion, by bringing the medical research agents' visibility and the researchers' findings into the popularised text using different lexico-grammatical structures.



It could be then concluded that by using noun phrases that refer to the Med-E-RAs researchers followed material and mental verbal acts, Med-E-Pops writers reinforce the idea that the real agents of the research story narrated in the Med-E-Pops are the Med-E-RAs researchers and not themselves as Med-E-Pops writers and mediators.

### **3.3 PASSIVE CONSTRUCTIONS**

It is widely accepted that (in)visibility is used, especially in academic English, to meet readers' expectations and suit genre constraints. Therefore, this section aims to explore how the (in)visibility of the writers is displayed in Med-E-Pops on the basis of the results from the analysis of the use of passive constructions in the corpora under study. According to the corpus-driven analysis, these syntactical linguistic units have a high frequency both in the Med-E-RAs and in the Med-E-Pops. Therefore, I first analysed the results obtained from the Med-E-RAs analysis in order to establish a starting point for the later contrastive analysis presented in sections 3.3.2 and 3.3.3.

#### **3.3.1 Passive constructions in Med-E-RAs**

Passive constructions are a well-known representative feature of the RA genre. These structures have been studied from different angles: from personal and impersonal authorial reference (Molino 2010), from the potential authorial involvement in science popularizations (Kim and Thompson 2010), as collocational frameworks in medical RAs (Luzón-Marco 2010), or from the point of view of writers' stance and their knowledge, responsibility and commitment (Hyland 1996b), among others. It is agreed that the rhetorical purpose of these passive constructions is to emphasise the entities studied or the research process presented in the RAs and not the authorship of the research. This shows the RA writer's detachment from what is being conveyed as regards the implications or responsibility of that piece of research. In the RA genre, passive constructions are one of the most distinctive rhetorical conventions as many scholars such as Biber and Finegan (1994b), Hyland (2002b, 2006); Swales and Feak (2004), Hartley (2008) or Bailey (2011) have pointed out.

Turning to the formal analysis of data it can be said that it was therefore not unexpected that as many as 2,912 tokens (15.99 per 1,000 words) of passive agentless constructions were found in Med-E-RAs whereas in the Med-E-Pops corpus only 122 tokens of passive constructions were found; that is, 5.58 per 1,000 words. See for example:

<i>Med-E-RA10</i>	<i>Med-E-Pop10</i>
<p>(61) A total of 21 161 people of all ages took part in the NHANES from 2001 through 2004; 6785 participants (32.1%) were aged 40 years and older. Participants <b>were excluded from balance testing if they were unable to stand on their own</b>, were having dizziness sufficient to cause unsteadiness, weighed more than 275 pounds, had a waist circumference that could not accommodate proper fitting of the standardized safety gait belt, needed a leg brace to stand unassisted, or had a foot or leg amputation. In addition, participants who were totally blind or sufficiently visually impaired to require assistance in finding the examination room were excluded from participation.</p>	<p>Balance function <b>was assessed</b> by subjects' ability to stand upright with and without visual cues, such as being able to stand upright while wearing a blindfold or with their eyes closed, or by not having to use their arms to maintain balance while standing on a foam-padded mat</p>

From the contrastive study carried out to examine the potential (in)visibility of the Med-E-Pops writers, the passive constructions were one of the most remarkable and comparable variables to carry out the study of the transformation of Med-E-RAs into Med-E-Pops. These passive constructions present the highest frequency of all the variables suggested by the formal analysis of the Med-E-RAs corpus. This section later discusses that the results from the contrastive analysis again reveal a process of activation or personalisation. That is, as introduced in section 3.2, it ensues from the contrastive data that Med-E-Pops writers transform Med-E-RAs passive constructions into active constructions. This syntactic transformation creates a clearer Med-E-RA researchers' visibility as well as a clearer semantic understanding of the medical content.

It is widely accepted that RAs contents cannot be presented at random as regards syntactic structures or lexico-grammatical features. In other words, to fit in the genre and in its context, RAs must strictly follow the rhetorical conventions characteristic of the field of publication. Therefore, the use of the passive in RAs is not a question of the authors' proximity to certain rhetorical backgrounds but

a genre specific convention as has been pointed out in this section. Therefore, it is not surprising that every Med-E-RA presented instances of passive constructions. Med-E-RA15 presented the highest frequency with 152 tokens and Med-E-RA36 represented the lowest frequency with 10 tokens found.

Although a move contrastive analysis has not been carried out in this study between the corpora of texts under study, as explained in section 3.1, it should be noted that passive constructions are more recurrent in the Med-E-RAs Method sections. Researchers wish to highlight what was done, and not who did it, in order to present the research procedures as an objective, meticulous, professional and aseptic process. Passive constructions are then essential rhetorical lexicogrammatical tools conveying impersonality and therefore needed for RAs to suit the genre expectations in the academia. The agent of these passive constructions used in RAs is never explicitly written but easily deduced as shown in the examples below. These examples have been modified and the potential agents have been introduced to exemplify what has just been explained. The communicative intention of the resulting impersonality conveyed by agentless passive constructions may be, as explained in Chapter 2, to avoid responsibility of what is being conveyed or also to present the piece for research as a trustworthy entity with no human intervention:

(62) Adolescents **were recruited** (*by the researchers*) through random-digit dialing procedures, followed by mailing of recruitment packets . [Med-E-RA33]

(63) Optimal Pegylated Interferon Therapy (IDEAL) study **was initiated** (*by the researchers*) to compare standard-dose and low-dose regimens of peginterferon alfa-2b, plus ribavirin, after it was observed (*by the researchers*) that both dose levels yielded similar rates of sustained virologic response in the absence of ribavirin. [Med-E-RA37]

In the Med-E-RAs corpus there were passive constructions with an explicit agent. Nonetheless, these constructions neither refer to the authorship of the Med-E-RAs nor give researchers visibility as can be observed in the following example:

(64) Mechanical ventilation was received **by 136 patients** (81.0%) [Med-E-RA40]

Further comments on the analysis of passive constructions in RAs have consciously been left out of this piece of research due to the fact that the core of this study is to study the Med-E-Pops writers' visibility. Therefore, focusing on the results of the

analysis of those Med-E-RAs that aid to establish a starting point for the analysis of passive constructions in Med-E-Pops, it can easily be seen that the frequency of passive constructions in Med-E-RAs is higher than in Med-E-Pops (15.99 per 1,000 words in Med-E-RAs and 5.58 per 1,000 words in Med-E-Pops). Med-E-Pops writers prefer to transform these conventional RAs agentless passive structures into active structures with a visible agent or actor. In other words, whereas Med-E-RAs researchers choose to use passive agentless constructions to suit the genre linguistic conventions—to seek objectivity, to hide the researchers' stance or to avoid commitment or responsibility towards the scientific findings—Med-E-Pops writers confirm that the Med-E-RAs researchers conducted the scientific process. This assumption has also been developed in section 3.2 (dealing with *we/noun* phrases that refer to the researchers in Med-E-Pops). To exemplify the Med-E-Pops writers' tendency to activate the Med-E-RAs passive agentless constructions unveiling who did what in the research process two examples are displayed below:

<i>Med-E-RA28</i>	<i>Med-E-Pop28</i>																					
<p>(65) Also, patients at relapse were included only if the minimum delay between the end of prior anticancer treatments and blood sampling was 2 mo. Patients with lymphoma were distinguished according to Ann Arbor staging as having localized (stage I or II) or metastatic disease (stage III or IV). Standard clinicopathologic information was recorded for all patients. Healthy volunteer subjects of similar ages were recruited from a local general pediatric department and were free of inflammatory, infectious, autoimmune, or vascular disease. <b>Blood sampling for the study was done during routine blood workup.</b> After discarding the first 2 mL after venupunction, peripheral blood samples were drawn: 2 mL of whole blood was collected in Cellsave preservative tubes (Immunicon) for CEC analysis, and 10 mL whole blood was collected in standard heparin tubes for circulating VEGFR2+-BMD progenitor cell analysis. Cellsave tubes contain EDTA and a cell preservative agent that stabilizes fragile cells, such as CECs, and have been previously validated in our laboratory for CEC measurement by flow cytometry (24). [...]</p> <p>Table 1. Characteristics of patients with pediatric solid malignancies (N = 45)</p> <table border="1"> <thead> <tr> <th>Patients</th> <th>Localized</th> <th>Metastatic</th> </tr> </thead> <tbody> <tr> <td>n</td> <td>23</td> <td>22</td> </tr> <tr> <td>Male</td> <td>15</td> <td>17</td> </tr> <tr> <td>Median age, y</td> <td>9,1</td> <td>12,9</td> </tr> <tr> <td>Range, y</td> <td>1-22,5</td> <td>2,7-25</td> </tr> <tr> <td>Initial diagnosis</td> <td>22</td> <td>12</td> </tr> <tr> <td>Relapsed disease</td> <td>1</td> <td>10</td> </tr> </tbody> </table>	Patients	Localized	Metastatic	n	23	22	Male	15	17	Median age, y	9,1	12,9	Range, y	1-22,5	2,7-25	Initial diagnosis	22	12	Relapsed disease	1	10	<p>Dr. Farace and colleagues measured circulating mature endothelial cells and bone marrow-derived endothelial progenitor cells in paediatric patients with solid tumours. <b>They collected blood from 23 patients with localised disease,</b> 22 patients with metastatic disease, and 20 healthy participants and measured subsets of circulating cells.</p>
Patients	Localized	Metastatic																				
n	23	22																				
Male	15	17																				
Median age, y	9,1	12,9																				
Range, y	1-22,5	2,7-25																				
Initial diagnosis	22	12																				
Relapsed disease	1	10																				

<i>Med-E-RA34</i>	<i>Med-E-Pop34</i>
<p>(66) Laboratory technicians were blinded to all food labeling information. All samples were ground before analysis. <b>Potassium was measured using</b> the Association of Analytical Communities (AOAC) official method 985.01. <b>Phosphorus was measured using</b> AOAC official method 984.27; both the potassium and phosphorus assays are inductively coupled plasma atomic spectroscopy procedures. Protein was measured using the AOAC official method 990.03, the Dumas nitrogen combustion method, with the Elementar Americas Rapid-N apparatus (Elementar Americas, Mt. Laurel, NJ).</p>	<p>In the new study, <b>Dr. Richard Sherman and Dr. Ojas Mehta from the University of Medicine and Dentistry of New Jersey, Robert Wood Johnson Medical School, looked at the potassium and phosphate</b> content in “enhanced” and additive-free meats and poultry from area supermarkets.</p>

Med-E-RAs researchers could have perfectly paraphrased for instance their methodology explaining which procedures were carried on, for instance in the examples introduced above as:

(67) **We** (*the leading researchers and authors of this piece of research*) did blood sampling during routine blood workup; instead of “Blood sampling for the study was done during routine blood workup” [Med-E-RA28]

(68) **We** (*the leading researchers and authors of this piece of research*) measured Potassium using the Association of Analytical Communities (AOAC) official method 985.01; instead of “Potassium was measured using the Association of Analytical Communities (AOAC) official method 985.01” [Med-E-RA34]

Having analysed the use of passive constructions in Med-E-RAs and particularly why they become active ones in Med-E-Pops, in the following subsection I turn to the analysis of passive constructions in Med-E-Pops. Results from passive constructions in Med-E-Pops are first interpreted and later contrasted with those from Med-E-RAs. This analysis enables us to reflect on whether the use of the passive in Med-E-Pops is just a lexico-grammatical convention that mirrors the same convention in the corresponding RA or if it results from a process of conscious rhetorical adaptation.

### 3.3.2 Passive constructions in Med-E-Pops

As shown in sections 3.2.1 (agent + active) and section 3.4 below (abstract rhetors), Med-E-Pops writers prefer to express the authorship of the Med-E-RAs research more directly using the nominal groups followed by active verbs rather than passive constructions with an agent.

Cargill and O'Connor (2009: 39) stated that one common problem with writing passive sentences is writing subjects that are too long with a short passive verb at the end, which become difficult for the reader to follow. That may be one of the reasons that justify the lower frequency of passive constructions in the Med-E-Pops corpus compared with their use in the Med-E-RAs corpus (5.58 per 1,000 words and 15.99 per 1,000 words respectively) as table 20 shows:

	<i>Med-E-RAs</i>	<i>Med-E-Pops</i>
Passive Constructions	2,912 (15.99)	122 (5.58)

Table 20. *Passive constructions Med-E-RAs and Med-E-Pops contrastive results.*

Passive constructions may hinder the full understanding of the message for a lay audience. However, for the sake of simplicity of this piece of research, I have not examined the reception approach (Lyons 1970, Fairclough 1992a, Whitney 1998, Crystal 2007, to name a few) in the case of this dissertation of Med-E-Pops. Rather, it is the issue of whose agency is displayed in the Med-E-Pops written by these specialised journalists that this dissertation aims to observe.

In this section I study the (in)visibility of Med-E-Pops writers as a result of processes of (imp)personalisation and/or (de)personalisation of the voice of Med-E-RAs researchers. Specifically, what this section proposes is to relate the presence or absence of agency in passive constructions to the concept of the Med-E-Pops writers' visibility. I therefore interpret the passive constructions found in the Med-E-Pops corpus from the concept of the writers' voice and their corresponding visibility.

In the formal analysis, 122 tokens (5.58 per 1,000 words) of passive constructions were found in the Med-E-Pops corpus. The distribution of these tokens has not been studied in depth regarding moves due to the divergent textual conventions that both genres, Med-E-RAs and Med-E-Pops, have. Therefore, this potential mirroring or study contrasting the results obtained by moves would

be neither representative nor significant. In a preliminary formal study of the passive constructions in Med-E-Pops (Herrando-Rodrigo 2012) it was perceived that 102 tokens (4.67 per 1,000 words) were passive agentless constructions and 20 tokens (0.91 per 1,000 words) were passive constructions with explicit agents introduced by the preposition *by*. See for example:

(69) **One patient was withdrawn** from the study because of severe gastrointestinal bleeding shortly before implantation, and another died of unrelated causes during the safety period with a functioning graft. In these five patients, only one intervention (surgical correction) **was needed** to maintain secondary patency. Overall, primary patency **was maintained** in seven (78%) of the surviving nine patients one month after implantation, and five (over 60%) of the surviving eight patients six months after implantation. [Med-E-Pop8]

(70) **The research was financed by** the World Health Organization, the Shandong provincial health department and the China Medical Board of New York, an independent medical foundation begun in 1914 by the Rockefeller Foundation, which supports medical education and research across Asia. [Med-E-Pop15]

Passive construction tokens were found in 38 Med-E-Pops. Only two Med-E-Pops (Med-E-Pop 29 and Med-E-Pop30) showed no instances of passive constructions. Table 21 summarises this results:

	<i>Number of tokens</i>	<i>Normalised per 1,000 words</i>	<i>Percentage over the total amount of passive constructions in the Med-E-Pops corpus</i>
Passive constructions with agent	20	0.91	16.39
Agentless passive constructions	102	4.67	83.6

Table 21. *Passive constructions results in the Med-E-Pops corpus.*

To study the tokens in context, to classify the results and to construe a meaningful interpretation from the analysis this section is divided into two parts. To explore whether the absence or presence of agency can be associated with the voice of Med-E-RAs researchers or the voice of Med-E-Pops writers and their consequent

visibility the first part will deal with the exploration of visibility in passive constructions with an agent. The second part will deal with the exploration of the agentless passive constructions and the potential association of their implicit agents with the visibility of either Med-E-RAs researchers or Med-E-Pops writers.<sup>86</sup>

*i) Passive constructions with an agent in Med-E-Pops*

First, passive constructions *with an explicit agent* were analysed to see if the explicit agency was related to the Med-E-RAs researchers' or Med-E-Pops writers' visibility. These explicit, and sometimes the only syntactic agents, were introduced by means of the preposition *by*. Results were interpreted as follows:

<i>Passive construction with an agent</i>	<i>Number of tokens</i>	<i>Percentage over the passive constructions with agent</i>
Agent that represented the Med-E-RAs researchers' agency.	1 (0.04)	5
Agent that represented the Med-E-RAs researchers' agency with verbal ellipsis.	1 (0.04)	5
Funding of the research	8 (0.36)	40
Natural cause involved in the research process	5 (0.22)	25
Actions or processes carried out by participants/patients	5 (0.22)	25

Table 22. *Classification of passive constructions with agent results.*

One token (0.04 per 1,000 words) out of the 20 tokens found displayed an agent that represented the researchers' authorship of the Med-E-RA:

<sup>86</sup> As regards the tense used in the Med-E-Pops passive constructions, different tenses were found but the data obtained seemed to portray no significant implications and hence, it was considered to be meaningless for the issue of (in)visibility. Therefore, no significant conclusion could be drawn regarding the tense used in the passive constructions of Med-E-Pops.



(71) **The study was led by investigators from Massachusetts General Hospital** (MGH) in the US and the Desmond Tutu HIV Centre at the University of Cape Town and is published in the 4 August issue of the *Annals of Internal Medicine*. The paper is ready to view online and its release coincides with the International AIDS Society Conference meeting which started in Cape Town on Sunday. [Med-E-Pop36]

One token (0.04 per 1,000 words) presented a verbal ellipsis related to the research process authorship but conveyed the agent explicitly as illustrated in the example:

(72) The new report, **by several of the most prominent researchers in the field**, does not imply that interactions between genes and life experience are trivial; they are almost certainly fundamental, experts agree. [Med-E-Pop17]

The remaining 18 tokens (0.82 per 1,000 words) of passive constructions with an explicit agent have been grouped according to their potential pragmatic research dimension as regards: funding, natural cause (illness) and participants or subjects. These agents were actors of actions that had no relation with either the researchers' authorship or their visibility but had a satellite relationship with an action linked to the research process.

*Funding*: 8 Med-E-Pops explicitly quoted how the research displayed in their corresponding Med-E-RAs had been financially supported. This convention is becoming compulsory in the Med-RA genre conventions due to the fact that with no economical funding the research or study would not have been able to be conducted, as introduced in section 3.1. There is a short section that refers to the Med-RA funding. Moreover, even abstracts are recently following that tendency as Herrando-Rodrigo *et al.* (2012: 29) point out:

In Health Sciences, abstracts are very often not written as a single paragraph but are divided into sections with a given heading. Common headings are: background or context, objective, methods or design (setting and procedure), results or findings, conclusions, interpretation, or comment, and funding. This last move is optional and sometimes information on financial help and sources is instead included at the end of the article under the heading acknowledgements (see section 3.6.2). Each move consists of one or two synthetic sentences.

<b>Move</b>	Function
<b>Background</b>	Establishes the context of the paper and motivates the research or discussion.
<b>Objective</b>	Indicates the purpose or hypothesis, outlines the intention behind the paper.

<b>Methods</b>	Provides information on design, procedures, assumptions, approach, data, etc.
<b>Results</b>	States the main findings, the argument, or what was accomplished.
<b>Conclusions</b>	Interprets or extends the results, draws inferences, points to wider implications.
<b>(Funding)</b>	Summarises the financial sources.

(Adapted from Hyland 2000)

It could be interpreted that Med-E-Pops have inherited or acquired this rhetorical convention from Med-RAs as illustrated below:

(73)Funding support for this study, which took place between March 2004 and June 2006, **was provided by** the Schering-Plough Corporation of Kenilworth, N.J., the brand manufacturer and provider of study drugs ribavirin (also known as Rebetol, F.D.A. approved since 1996) and peginterferon alfa-b (or Peg Intron, approved in 2001). Peginterferon alfa-a (or Pegasys, approved in 2002) is manufactured by Hoffman La Roche Inc., of Nutley, N.J. Sulkowski has received research support from and is a paid consultant to Schering-Plough. He has also received research support from and is a paid consultant to Roche. The terms of his **arrangements are managed by The Johns Hopkins University** in accordance with its conflict of interest policies. Co-principal investigator John McHutchison, from Duke University Medical Center in Durham, N.C., also has received research support from Schering-Plough [Med-E-Pop37]

The fact that almost 20% of the Med-E-Pops published on different specialised websites include this Med-RAs convention could be interpreted as a trace of faithfulness to the Med-RA and its academic implications. That is, writers choose to include this reference to funding in order to promote a professional character in their texts. The audience, the Med-E-Pops recipients, can thus quash any doubts about the fact that what has been done in the Med-E-RA deserves credibility, prestige and therefore financial support. Therefore, including this funding reference focuses the Med-E-Pops readers' attention not on the text they are reading—written by the Med-E-Pops writers—but on the researchers and their significant work.

Five tokens were found of what this dissertation has considered as *natural cause involved in the research process*. Passive constructions with explicit agents that refer to a natural cause or an element related to the illness process have been classified under this umbrella term. The following tokens aim to exemplify this type:

(74) The mechanical strength usually provided by such synthetic materials **was in this study provided by the grafts themselves**. The authors propose that this is key to maintaining graft viability in the long-term. [Med-E-Pop8]

(75) The most disturbing aspect of their research, the authors said, was that, among those who had a diagnosable mental illness, 24 percent said **they were moderately or severely disabled by it**. [Med-E-Pop15]

Five other tokens were found under the umbrella term of *participants or subjects*. The actions described refer to actions carried out by the participants in the Med-E-RA research as the following examples show:

(76) The drivers with Alzheimer's committed an average of 42 safety mistakes, 27 percent more than **the average of 33 safety errors made by those without Alzheimer's**. Drivers with Alzheimer's who did better on the cognitive tests made fewer on-road safety mistakes, the team found. **Lane violations were the most frequent mistakes made by all participants**. For every five years older the driver was, the number of safety errors increased by about 2.5, whether or not they had Alzheimer's. [Med-E-Pop4]

(77) In poor countries, the World Health Organization recommends starting when counts are anywhere from 200 to 350; in rich countries, **the decision is made by patients and doctors**. [Med-E-Pop7]

From this formal analysis it could be concluded that 90% of the passive constructions with an agent do not refer to the Med-E-RAs researchers. In other words, the agents that are introduced by the preposition *by* as syntactic agent of the passive constructions and semantic subjects of the verbal action do not represent either the Med-E-RAs researchers or the Med-E-Pops writers.

Needless to say, the Med-E-Pops writers are the ones who decide which information to include and which to leave out from the Med-E-Pops so, in that sense, everything is a trace of the Med-E-Pops writers' visibility—since, as mentioned in section 1.4, voice cannot be completely avoided in a written text. However, by way of conclusion, it can be said that Med-E-Pops writers prefer the use of passive constructions with an agent to convey who supported the research with funding rather than who carried out the research process. Therefore, I turn to examine the interpretation of the formal results from the agentless passive constructions in order to explore whether the visibility of the Med-E-RAs researchers or of the Med-E-Pops writers could be associated with the implicit agents of these constructions.

ii) *Agentless passive constructions in Med-E-Pops*

In the formal analysis, 102 tokens (4.67 per 1,000 words) of passive agentless constructions were found in the Med-E-Pops corpus as a whole. A formal analysis was carried out first to infer who might be the implicit agent of the passive constructions. Since this section aims to relate the absence of agency to the concept of the Med-E-Pops writers' visibility, I analysed the semantic relation of every passive construction implicit agent. Having analysed each token in context, the following taxonomy was designed based on the data obtained and the type of semantic relation or communicative purpose of the implicit agent:

<i>Communicative purpose of the implicit agent</i>	<i>Number of tokens</i>	<i>Percentage of the passive agentless constructions</i>
Invocation of Med-E-RAs publication prestige	14 (0.64)	13.72
Natural causes involved in the process under research	12 (0.54)	11.76
The whole discipline community	8 (0.36)	7.84
Circumstantial framing for the research process	5 (0.22)	4.9
Med-E-RAs researchers as agents of the research process	63 (2.88)	61.76

Table 23. *Distribution of agentless passive constructions according to communicative purpose of their implicit agent.*

Regarding the semantic relation, this first type of agentless constructions (*Invocation of Med-E-RA publication prestige*), it should be commented that four electronic publications (*DocGuide*, *Medical News Today*, *Health Day News* and the *New York Times Health Guide*) use passive agentless constructions to indicate the Med-E-RAs source of publication, as shown below in the following example:

(78)**Results of the study are published** in the June 2009 *Journal of Allergy and Clinical Immunology*. [Med-E-Pop18]

I found 14 tokens of these agentless passive constructions. That is, 0.64 normalised per 1,000 words. Instances such as; "... these findings are discussed in this week's edition of *The Lancet*" (Med-E-Pop12), refer to actions primarily performed by researchers. However, I interpreted the reference to the source of publication

realised by passive construction as an invocation of the prestige of the publication rather than the visibility of the Med-E-RAs researchers.<sup>87</sup> They are the ones who decided to publish the research and this may be the reason why Med-E-Pops writers referred to the source of publication and to the people who were responsible for that publication. Besides, that may be due as well to its technical value or due to further reasons such as lab funding, financial or political interests. Instances such as: “Results of the study are published in the June 2009 *Journal of Allergy and Clinical Immunology*” (Med-E-Pop18) or “The study was published in a recent issue of the *Journal of Palliative Medicine*” (Med-E-Pop31) may exemplify the idea that Med-E-Pops writers introduce the convention of citing the source by means of a passive agentless construction and not with other types of structure. This usage may highlight the fact that it is the experts who hold the highest degree of seniority and mastery in the field that decide to publish certain pieces of research, thus making them stand out among others. It could also be interpreted that these passive agentless constructions lead the readers’ attention to the Med-E-RAs authors and their mastery in having their research published and not to the Med-E-Pops writer’s authorship and visibility. However, these tokens, which represent the 13.72% of the total average of agentless constructions found in the Med-E-Pops corpus, make a direct syntactic reference to the source of publication. Therefore, it is the visibility of the publications and not the visibility of either researchers or writers that is created by these types of implicit agents.

In the corpus under study, 12 tokens of implicit agents that referred to *natural causes involved in the process under research* were found. For the sake of overall consistency and due to the nature of the results, this category was also used to group passive constructions used by the Med-E-Pops writers to refer to natural agents that cause a change in either the research process or in the research issue under study. Two examples have been chosen to exemplify this type:

(79)The tuberculosis (TB) bacillus *Mycobacterium tuberculosis* kills more than 2 million people every year. However, even though many more **are infected**, only 10% of infected individuals develop active disease. [Med-E-Pop3]

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87 This dissertation has observed that in the Med-E-Pops genre it is a generic convention to name their Med-E-RAs source. However, how to mention this source, that is the lexicogrammatical conventions to name them, differs in the Med-E-Pops corpus.

(80)The critical regulation of the body's salt, potassium and acid content is performed by the kidneys, where waste products and excess fluid from the **body are removed through the urine**. [Med-E-Pop34]

In these tokens (0.54 normalised per 1,000 words), no human intervention is found. The agents are naturally bounded by human processes, bacterial processes, etc. and the agents or actors involved in these passive agentless constructions refer neither to the Med-E-RAs authors nor to the Med-E-Pops writers. The Med-E-Pops role in these processes is just to be a narrator of the research story.

Implicit agents that referred to *the whole discipline community* had an occurrence of 0.36 per 1,000 words (8 tokens). For different purposes such as establishing a research niche or justifying a methodological angle, Med-E-Pops use some agentless constructions that appeal to the whole scientific community, including the Med-E-RAs authors as well, as the following examples show:

(81)Primary prevention of ovarian cancer is challenging because **little is known** about its cause. [Med-E-Pop27]

(82)Increased breast cancer risk for postmenopausal women **has previously been linked** to obesity and diabetes. [Med-E-Pop35]

Therefore, 7.84% of the implicit agents refer to neither the Med-E-RAs researchers who wrote the Med-E-RAs nor to the Med-E-Pops writers but to the whole research community in order to contextualise the research topic.

The last type of implicit agent that does not refer to the Med-E-RAs researchers' visibility is what I have labelled as *circumstantial framing for the research process*. These tokens, five passive agentless constructions, might be an attempt to help the potential reader to better understand the research process. Therefore, 4.9% (0.22 per 1,000 words) of these implicit agents help the reader to frame the research carried in Med-E-RAs as shown in the following examples:

(83)**The authors** acknowledged that **their cases and controls were not matched** and that the small number of cases of pre-eclampsia in their sample (23) made it difficult to draw firm conclusions. [Med-E-Pop1]

(84)Venom therapy, in which small periodic injections of venom from bees, wasps and other stinging insects build up immunity among those susceptible to potentially lethal anaphylactic shock from stings, has had

widespread use since **it was developed in the 1970s at Johns Hopkins.**  
[Med-E-Pop18]

In contrast, Med-E-RAs researchers as agents of the research process show the highest frequency of implicit agents (61.76%). These agents do not have any accompanying feature which characterises them except the direct semantic relation to the agents of the research process, that is, the Med-E-RAs researchers. 63 tokens were found of passive agentless constructions whose agents were not explicitly conveyed but were easily deduced to be the Med-E-RAs researchers. Two examples have been selected to represent this category:

(85)Using 57 swine models, the operative time **was measured** for pyeloplasties performed by 3 non-urologic surgeons who did not have any experience in freehand laparoscopy or RALS and 2 experienced urologic surgeons, 1 of whom had no experience in laparoscopic techniques and the other who had very limited experience. [Med-E-Pop6]

(86)Interestingly, case fatality rates in Japan were significantly lower (11.8% lower) than in Europe, US, Australia, and New Zealand. No other regional differences in case fatality **were found**. The authors suggest that these regional differences may be the result of variation in the speed of patients' admission to hospital for the early occlusion of the aneurysm. [Med-E-Pop21]

Therefore, this type of agentless passive constructions is the only type that can be associated with the creation of visibility. More specifically, these agents should be associated with the creation of the Med-E-RAs researchers' visibility whereas the other four types of implicit subjects do not create the visibility of either the Med-E-RAs researchers or the Med-E-Pops'. The high frequency of this category (2.88 per 1,000 words) deserved further analysis.

What is more, according to this dissertation approach to the writers' visibility, these five types of implicit agents can be classified into two main groups. That is, the first group comprised by the four first types of implicit agents—*invocation of Med-E-RA publication prestige, natural causes involved in the process under research, the whole discipline community and circumstantial framing for the research process*—makes no reference to either the Med-E-RAs researchers or the Med-E-Pops writers. However, the second group of these implicit agents—Med-E-RAs researchers as agents of the research process—establishes an implicit relation to the Med-E-RAs researchers as agents of the passives constructions and actors of the research process carried out in the Med-E-RAs.

<i>Groups of implicit agents according to their Semantic relation</i>	<i>Number of tokens</i>	<i>Percentages</i>
Implicit agents that do not refer to either the visibility of the Med-E-RAs researchers or Med-E-Pops writers	39 (1.79)	38.22
Implicit agents that refer to the visibility of the Med-E-RAs researchers	63 (2.88)	61.76

Table 24. *Distribution of tokens normalised per 1,000 and percentages according to the visibility of the implicit agents.*

The frequency and implication for this dissertation of these *implicit agents that refer to the visibility the Med-E-RAs researchers* led this interpretation of findings to turn to SFL, as in section 3.2. By so doing, I could study in depth more aspects related to the visibility of the Med-E-RAs researcher and Med-E-Pops writers. Therefore, studying the verbal processes used in these agentless constructions I could observe whether these verbal patterns confirmed the agency of the Med-E-RAs researchers in order to create their visibility or whether these verbal patterns created the visibility of the Med-E-Pops writers.

In passive constructions, syntax is manipulated to place what has been done at the beginning of the utterance. Whatever has happened in the research process is considered to deserve more attention than who did it. In the case of the RA genre, the use of agentless passive constructions is a rhetorical convention that potentially denotes impersonality of the text. Therefore, by using these constructions the authors project objectivity, neutrality and personal distance from the research process to focus the readers' attention on the research. Despite the fact that the agent is not included in the syntactic construction, the reader is perfectly able to infer who has carried out the research action even though the authorship is not explicitly conveyed, marked or introduced by the preposition *by* as the agent of the action or research process. Therefore, inspired by previous approaches to agentless constructions such as Thompson (2001), I decided to study the Med-E-Pops writers' invisibility in detail, applying Thompson's considerations to the data obtained in this analysis of agentless passive constructions. This invisibility of Med-E-Pops writers is conveyed in the Med-E-Pops by enhancing the creation of the Med-E-RAs researchers' visibility—since both visibilities cannot coexist or be created and perceived to the same degree. Figure 4 summarises Thompson's (2001) approach to agency:



Verbal Process Type	MATERIAL	active passive
	MENTAL	active passive
	VERBAL BEHAVIOURAL	
	RELATIONAL	attributive Identifying
	EXISTENTIAL	
Agency	AGENCY MARKED	(Active)
	AGENCY UNMARKED	(Passive)

Figure 4. Figure adapted from Thompson (2001) that gathers the linguistic constructions studied to analyse the data obtained from the agentless constructions analysis.

According to Thompson (2001), I interpreted the results obtained from the formal analysis of my data by considering the verbal process types used by the Med-E-Pops writers in their Med-E-Pops.

- (i) Agentless passive constructions with a material process type verb
- (ii) Agentless passive constructions with a mental process type verb

(i) *Agentless passive constructions with a material process type verb* do not mark the agency of the authors but obviously suggest that someone has carried out the material process. These material processes (Halliday 1994) show what steps and procedures have been performed in order to conduct the study published as a Med-E-RA. By means of these agentless passive constructions with material process patterns, Med-E-Pops writers describe and report what has been done. Writers then make the Med-E-RAs authors more visible by simply stating what Med-E-RAs researchers did in their research as the following examples show:

(87) The Hopkins team studied 40 children between 7 and 12 not diagnosed with anxiety themselves but who had one or both parents diagnosed with an anxiety disorder. Half of the children and their families **were enrolled** in an eight-week cognitive behavioural therapy, while the other half **were put** on a waiting list and received no therapy at the time of the study, but **were offered** therapy a year later. [Med-E-Pop11]

(88) **Nurses were randomised** to receive surgical masks (n = 225) or the fitted N95 respirator (n = 221) which they were to wear when caring for patients with febrile respiratory illness. The primary outcome of the study

was laboratory-confirmed influenza. Effectiveness of the surgical mask was assessed as non-inferiority of the surgical mask compared with the N95 respirator. [Med-E-Pop38]

Material processes carried out by the Med-E-RAs researchers were carried out by 24 (1.09 per 1,000 words) tokens out of the 63 tokens of passive agentless constructions. Therefore, Med-E-Pops writers create Med-E-RAs' visibility by using material processes as verbal acts that confirm the agency and therefore visibility of the Med-E-RAs researchers—and not the visibility of the Med-E-Pops writers. Material processes indicate what the Med-E-RAs researchers have done in their study.

(ii) *Agentless passive constructions with a mental research process* convey that the cognitive relations between the results obtained from the material processes and the conclusions drawn from the findings have been established by the Med-E-RAs researchers and not by the Med-E-Pops writers. See examples below:

(89) Another method, the buccal route, in which the misoprostol pill is tucked between the gums and the cheek and allowed to dissolve, **was also found** to work better than swallowing. [Med-E-Pop23]

(90) Condom use **is associated with a reduced risk of contracting herpes simplex virus 2 (HSV-2)**, according to a report based on pooled analysis of data from previous studies in the July 13 issue of [*Archives of Internal Medicine*]. [Med-E-Pop25]

These verbal patterns turned out to be more frequent than material processes since 39 tokens (1.78 per 1,000 words) were found in the Med-E-Pops corpus. Therefore, Med-E-Pops writers lead the readers' attention to the knowledge producers and source of the research; the Med-E-RAs authors. Using mental processes, Med-E-Pops writers signal who carried out the cognitive process of interpreting data and highlight the prestige, authorship and responsibility of the research findings. By so doing, Med-E-Pops writers become less visible by stressing the research goals achieved by the Med-E-RAs.

Again, these formal features used by Med-E-Pops help to create the visibility of the Med-E-RAs researchers and not the visibility of the Med-E-Pops writers. A different degree of visibility would be conveyed, in line with Thompson's (2001) study, with the use of active verbs constructions with material or mental verbs. The use of these constructions would convey a high degree of Med-E-RAs visibility as shown in section 3.2.



the following examples, interpreted using the figure presented above, help to justify the creation of the visibility of the Med-E-RAs researchers—despite being passive agentless constructions:

Med-E-Pop26:

*[Medical records were used to analyse the relative risk of ovarian cancer...],*

<-material process, passive, - (no)agency>

so

<scarcely visible Med-E-RA researcher>

Med-E-Pop39:

*[Air pollution has been linked to a variety of health problems...]*

<mental process, passive, - (no)agency>

so

<fairly visible Med-E-RA researcher>

Therefore, an utterance with a mental active research process would make the Med-E-RA researcher very visible—since only researchers can carry out mental processes in their research—and the Med-E-Pops writer completely invisible. However, material passive agentless constructions would present a less visible Med-E-RA author and a slightly more visible Med-E-Pops writer if we move down the axis of the figure proposed above. Even when the text of a Med-E-Pop moves away from a clear expression of the Med-E-RAs author’s visibility by framing actions more as passive constructions with material processes than as active constructions with mental verbs, it eventually always turns out that the agency of the research belongs to the Med-E-RAs researchers and therefore that we would never be able to find a token that would place us at the right end of the vector but towards the middle of this vector. As mentioned above, Med-E-Pops writers create the visibility of the Med-E-RAs researchers by using these agentless passive constructions with material and mental verbal processes. These constructions both aid to infer who the person is that carried out the research process—and deserves to be visible—and also denote the professionalism of the Med-E-Pops by reproducing Med-RAs specific lexico-grammatical conventions that build trust regarding these Med-E-Pops texts as reliable versions of the former Med-E-RAs.

Therefore, the 63 tokens of agentless constructions (2.88 normalised per 1,000 words) whose easily inferred agents were the Med-E-RAs researchers, contribute to the creation of the researchers visibility and not to that of the Med-E-Pops writers’.

### 3.3.3 Concluding remarks

This section started with the observation that the occurrence of passive constructions is very high in Med-E-RAs. In fact, passive constructions show the highest frequency (15.99 per 1,000 words) of all the elements analysed in Med-E-RAs. This might be due to the need of Med-E-RAs authors to comply with the rhetorical conventions of the Med-RA genre when shaping their research as RAs with the final aim of getting their work published in specialised journals. Passive constructions are also very recurrent in the Med-E-Pops corpus if compared with other lexico-grammatical features studied in this piece of research.<sup>89</sup> Whereas in Med-E-RAs the tokens of agentless passive constructions found clearly pointed to the researchers as implicit agents or actors of the verbal and research processes, the tokens found in the Med-E-Pops did not always refer to either the Med-E-RAs researchers agency or the Med-E-Pops agency.

To explore whether the use of the passive in Med-E-Pops is a genre convention inherited from RAs or if they are conscious choices carefully selected for rhetorical purposes, passive constructions were manually scanned in context. The presence or absence of an agent and its implication on the Med-E-Pops writers' visibility casts light on the possible conclusions explained in this section.

The formal analysis of passive constructions in Med-E-Pops reveals that most of the passive constructions with an agent do not refer to the Med-E-RAs researchers but to the funding of the Med-E-RAs research. In other words, the agents that are introduced by the preposition *by* as syntactic agent of the passive constructions and semantic subjects of the verbal action represent neither the Med-E-RAs researchers nor the Med-E-Pops writers. These syntactic agents explicitly refer to who financially supported the research, as Med-E-RAs also state in their texts. This feature adds a trace of trustworthiness to the research and its researchers since they have all deserved institutional support. These lexico-grammatical constructions could also be interpreted as an intentional communicative shift towards the Med-E-RAs writers' prestige and therefore visibility. But, as has been explained above, Med-E-Pops writers ultimately guide the potential readership to focus its attention on the value of the research—as research that has merited funding from external entities—and their authors.

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<sup>89</sup> The frequency of passive constructions in Med-E-Pops (5.58 per 1,000 words) is similar to the frequency of the use of reporting (5.76 per 1,000 words) and abstract rhetors (4.76 per 1,000 words) as will be explained in the following sections.

This section also concludes that the Med-E-Pops agentless constructions fall into two groups depending on the semantic reference of their implicit agent. One group refers to the framing and contingent circumstances of the research. The second group of agentless constructions refers to the Med-E-RAs researchers.<sup>90</sup>

From this second group, composed of agentless passive constructions whose implicit agent was the Med-E-RAs researchers, I was able to observe that the relation between the research agency and the Med-E-RAs visibility was not so much clearly created as simply easily inferable. Although Med-E-Pops writers prefer the use of structures to convey what has been done and not who did it, it is still clear who the actor of the research process is. Moreover, Med-E-Pops writers confirm the agency and therefore the visibility of the Med-E-RAs researchers using material and mental verbal processes that reinforce the Med-E-RAs researchers mediation between the research done and the obtained findings. These lexico-grammatical features used by Med-E-Pops writers corroborate not only the Med-E-RAs authorship but also their visibility in the Med-E-Pops.

However, Med-E-Pops writers still project a voice at the rhetorical or pragmatic level when choosing to use this kind of passive constructions and not active constructions with clearer references to a marked agency. Another interpretation of the use of these passive constructions would be that both corpora suggest that Med-E-Pops writers do not use agentless constructions as an inherited pattern from Med-E-RAs. Their frequency is balanced by other depersonalisation structures analysed in this dissertation, discussed in this chapter. This reveals a premeditated intention by Med-E-Pops writers to design linguistically balanced and constrained Med-E-RAs versions that make the reader trust the research thanks to the neutral, objective and compelling narrative and overall report as shown along this Chapter 3.

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90 For instance, these tokens may suggest that researchers' results and findings deserved to be published because these results have undergone a process of peer reviewing. Therefore, it is the experts who hold the highest degree of seniority and mastery in the field that decide to publish certain pieces of research, thus making them stand out among others. In the Med-E-Pops corpus there were also references to agentless constructions' implicit agents related to the discipline community. However, the most illuminating results were those obtained in the study of the passive agentless constructions whose unmentioned agents referred to the Med-E-RAs researchers.

In general, this section shows that the use of passive constructions as a lexicogrammatical feature that creates impersonality in written academic discourse enhances the creation of Med-E-RAs researchers' visibility in Med-E-Pops and not Med-E-Pops writers' visibility. While this dissertation initially aimed to relate the presence or absence of agency to the concept of Med-E-Pops writers' visibility, the interpretation of data has in the end yielded the result that the absence of agency in Med-E-Pops contributes to Med-E-Pops writers' invisibility and therefore it contributes to Med-E-RAs researchers' visibility.

### 3.4 ACTIVE VERBS WITH INANIMATE SUBJECTS OR ABSTRACT RHETORS

Since the frequency of active verbs with inanimate subjects is very high in Med-E-Pops—traditionally identified as impersonal strategies in RAs (Martínez 2001)—this section aims to determine the communicative intention of its use in the texts under study and to associate these also so-called abstract rhetors with the question of authorial visibility. Therefore, section 3.4.1 opens the discussion of active verbs with inanimate subjects or abstract rhetors with the exploration of the results obtained in Med-E-RAs as a starting point. The following section deals with the discussion of the findings obtained in the analysis of Med-E-Pops and further reflections of the contrastive analysis of both corpora. Finally, section 3.4.3 closes this abstract rhetors discussion of analysis findings with my concluding remarks on the data interpretation.

#### 3.4.1 Active verbs with inanimate subjects in Med-E-RAs

In the formal analysis of Med-E-RAs 327 tokens (1,79 per 1,000 words) of abstract rhetors were found. The occurrence of abstract rhetors in my Med-E-RAs corpus is not very high if this figure is compared to the other variables under study. Table 25 summarises the results found:

<i>Study</i>	<i>Results</i>	<i>Findings</i>	<i>Analysis</i>	<i>Research</i>	<i>Total</i>
144 (0.79) 44.03%	88 (0.48) 26.9%	65 (0.35) 19.8%	25 (0.13) 7.6%	5 (0.02) 1.5%	327 (1.79) 100%

Table 25. *Use of abstract rhetors in Med-E-RAs. Total number of tokens, normalised results per 1,000 words and the representing percentage from the total amount of abstract rhetors in the Med-E-RAs corpus.*

Although reference is made to the overall number of abstract rhetors, it may be useful to observe that the most recurrent and representative abstract rhetor in this corpus is *study*. Two examples are introduced below:

(91) **Our study also included** more heavily pretreated subjects than most previously reported studies. [Med-E-RA9]

(92) Although **this study had appropriate** power, there are limitations. [Med-E-RA13]

Despite the high occurrence of this abstract rhetor, 10 Med-E-RAs did not show any instance of *study*.<sup>91</sup> This unbalanced distribution may lie in the idiosyncrasies and stylistic choices that writers seem to make although, as shown in Chapter 2, the use of abstract rhetors in medical academic writing could be considered a generic convention rather than a writers' linguistic choice. For instance in my Med-E-RAs corpus we can find one text (Med-E-RA17) with 23 tokens of *study* and four others (Med-E-RA1, Med-E-RA2, Med-E-RA3 and Med-E-RA5) with more than 10 tokens of *study* each.

*Results* is the second most frequent abstract rhetor in my Med-E-RAs corpus. 88 tokens (0.48 per 1,000 words) were found. I include the following examples to illustrate this:

(93) **The results require** confirmation but are of potential concern, because IQ is an important predictor of subsequent academic performance. [Med-E-RA32]

(94) **The results of the repeated measures analysis supported** the findings of the analyses using baseline values for glucose, insulin and HOMA-IR. [Med-E-RA35]

14 Med-E-RAs did not show any token of the use of *results*. This is not surprising due to the lower occurrence of this abstract rhetor in my corpus. 9 Med-E-RAs have an occurrence of 4 or more and three RAs (Med-E-RA1, Med-E-RA3 and Med-E-RA 36 present) 6 or more tokens of *results*.

65 tokens (0.35 per 1,000 words) of the abstract rhetor *findings* were found. 17 Med-E-RAs used this abstract rhetor:

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91 Med-E-RA 2, Med-E-RA8, Med-E-RA 22, Med-E-RA23, Med-E-RA24, Med-E-RA25, Med-E-RA30, Med-E-RA34, Med-E-RA38 and Med-E-RA39



(95) Therefore, **our findings demonstrate** the need to investigate loss of menstrual cycle regularity in a timely manner. [Med-E-RA22]

(96) **These findings clarify** prior research in two ways. First, limitations of prior research were overcome in the current study by the use of standardized diagnostic measures to assign group membership. [Med-E-RA29]

The distribution of the tokens among the Med-E-RAs is again uneven. 5 Med-E-RAs (Med-E-RA1, Med-E-RA2, Med-E-RA11, Med-E-RA14 and Med-E-RA17) presented 8 or more tokens of this abstract rhetor. *Analysis* and *research* are less frequent than the other abstract rhetors under study. Therefore, they have been classified in the following section under the category *others* to enable a contrasting analysis with Med-E-Pops results. 25 tokens (0.13 per 1,000 words) of *analysis* and only 5 tokens (0.02 per 1,000 words) of *research* were found in the Med-E-Pops corpus. 12 Med-E-RAs show tokens of *analysis* and just 3 Med-E-RAs use the abstract rhetor *research*. Some examples have been included below:

(97) **This analysis adds** to the growing number of condom analyses that use an absolute number of unprotected sex acts for exposure as opposed to the more traditional measure of percentage condom use. [Med-E-RA25]

(98) First, this **analysis does not represent** an assessment of the estimated value of perfect information, which would examine whether the trial is worth doing. [Med-E-RA36]

(99) Longcore K. New studies dig up health risk in beach sand—**research suggests** it may be major source of contamination. [Med-E-RA20]

(100) **Future research should investigate** the mechanism(s) responsible for the effects of excess abdominal fat distribution on the relationship between PM2.5 and BP measures. [Med-E-RA39]

A further consideration closes this section. In both corpora I evaluated the meaningfulness of plural and singular abstract rhetors. That is, *study* and *studies*, *result* and *results* or *finding* and *findings*. A peculiarity should be mentioned here. The only remarkable feature of using the abstract rhetors in their plural or singular form was found in the distinction made between the singular *study* and the plural *studies*. When Med-E-RAs authors used the singular form they were usually making reference to their Med-E-RA. Nonetheless, when the plural form was used, a reference to previous literature was established most of the

times in the introduction or background move. Something semantically similar takes place with the abstract rhetor *research*. The 5 tokens found refer to previous research or future research still to be done. I quote some examples to illustrate this reflection:

(101) Our results showing that drivers with mild AD make more safety errors than older drivers without dementia on a standardized road test are compatible with **other studies** of driving in dementia. [Med-E-RA4]

(102) However, recent genome-wide association **studies** have also indicated that most common genetic risks, at least when studied individually, are modest in magnitude, with relative risks in the range of 1.3 or less. [Med-E-RA17]

(103) Our study did not show any associations between exposure to viral nucleic acids and SGA, despite other **research suggesting** possible links. [Med-E-RA1]

It was the Methods chapter that highlighted the importance of the use of abstract rhetors in scientific English and more specifically in medical RAs. With Luzón-Marco (2000) and her interpretation of abstract rhetors in Med-RAs—based on Halliday's (1998) approach to active verbs with inanimate subjects—the results discussed in this section should be interpreted as a Med-RAs generic convention of presenting the implications of the medical study. Therefore, as Hyland (1998) also points out, the situation described in the Med-E-RAs is independent of human agency. This alternative to the use of the passive construction as a depersonalisation strategy contributes, according to Ferrari (2003), to the depersonalisation of medical discourse by obtaining data as the source of any epistemic judgement as will be discussed in the contrastive analysis of Med-E-RAs and Med-E-Pops use of abstract rhetors included below.

Contrastive studies dealing with (im)personality and (de)personalisation processes were conducted in RAs and in scientific dissemination articles by Ciapuscio (1989, 1992a&b, 2003), Muñoz (1999), Gallardo (1999, 2005), Ferrari and Gallardo (1999), Gil-Salom (2000) or Martínez (2001). They suggest that nominalisations and, more specifically, abstract rhetors are kept in the resulting scientific dissemination articles or popularizations to maintain the reader's trust in the research process. I now turn to the discussion of the data obtained from the Med-E-Pops corpus analysis. The following section closes with the Med-E-RAs and Med-E-Pops contrastive analysis and an interpretation of the results.

### 3.4.2 Active verbs with inanimate subjects in Med-E-Pops

In the Med-E-Pops corpus 104 tokens (4.76 per 1,00 words) of these abstract rhetors were found. In order to contrast data from both corpora and to observe potential findings, a study of the same abstract rhetors was carried out in Med-E-Pops. Due to the uneven number of occurrences of *research* and *analysis* and to the appearance of unexpected abstract rhetors, a category called *others* was also added to the abstract rhetors taxonomy in Med-E-Pops. The following table displays the results found:

<i>Study</i>	<i>Results</i>	<i>Findings</i>	<i>Others</i>	<i>Total</i>
50 (2.28) 48.07%	10 (0.45) 9.6%	12 (0.54) 11.5%	32 (1.4) 30.76%	104 (4.76) 100%

Table 26. *Use of abstract rhetors in Med-E-Pops. Total number of tokens, normalised results per 1,000 words and percentage.*

The results suggest that *study* is the most frequent abstract rhetor. 50 tokens (2.28 per 1,000 words) were found in 28 Med-E-Pops. However, 12 Med-E-Pops did not show any instance of this abstract rhetor. This figure reveals that our Med-E-Pops writers favour its use. I include here two examples to illustrate its use:

(104) **Studies have suggested** an increased risk of ovarian cancer among women taking postmenopausal hormone therapy (HT), according to background information in the article. Data have been limited on the differing effects of formulations, regimens and routes of administration. [Med-E-Pop27]

(105) A **new study**, published online July 20 in *Pediatrics*, **found** that the Internet is the newest place for kids to get exposure to positive messages on tobacco use. Although tobacco content was found on less than 1 percent of the pages that teens view, there were more pro-tobacco pages than anti-tobacco pages. [Med-E-Pop33]

12 tokens (0.54 per 1,000 words) of *findings* were found in 10 Med-E-Pops. Med-E-Pop13 shows 3 tokens of this abstract rhetor. 10 tokens (0.45 per 1,000 words) of *results* were found in 9 Med-E-Pops. Only Med-E-Pop37 shows more than 1 token of this abstract rhetor. Some examples are displayed below:

(106) In what is believed to be the first study in humans examining the link between blood levels of folate—the naturally occurring form of folic

acid—and allergies, the scientists say **results add** to mounting evidence that folate can help regulate inflammation. [Med-E-Pop14]

(107) **Results** of a long-awaited study of 3,070 American adults at Johns Hopkins and 118 other U.S. medical centers **show that treatment** with either of the two standard antiviral drug therapies is safe and offers the best way for people infected with hepatitis C to prevent liver scarring, organ failure and death. [Med-E-Pop37]

(108) **The findings showed** that there were no fetal deaths and no growth-restricted infants in the study group. Also, there were fewer babies weighing more than 10 pounds in the study group than in the control group. [Med-E-Pop13]

(109) **Findings showed** that despite an increase in the average age of patients with SAH from 52 to 62 years, over 3 decades the likelihood of dying from a SAH has declined from 51% to 35%—a decrease of 0.6% per year. [Med-E-Pop21]

Abstract rhetors such as *the algorithm, evaluation, report, trial, diagnosis, program, data, evidence* and the 2 tokens of the abstract rhetor *analysis* were assigned to the category of *others*. Due to this variety of variables, the figure of *others*, 32 tokens, (1.46 per 1,000 words) is higher than the figures of *results* and *findings*. 18 Med-E-Pops used between 1 and 3 of these previously named abstract rhetors. Some examples to illustrate this point:

(110) **Further analysis indicated** that patients with intraoperatively diagnosed PFO had similar rates of in-hospital stroke and hospital death. Length of hospital stay and days spent in the ICU were also similar between those with intraoperatively diagnosed PFO and those without. [Med-E-Pop24]

(111) Although **such evidence suggests** that early intellectual development is indeed negatively affected by high levels of pollutant exposure, research is ongoing and the child participants will continue to be monitored through age 11, the researchers noted. [Med-E-Pop32]

By way of conclusion it could be said that the high frequency of abstract rhetors in Med-E-Pops (4.76 per 1,000 words) suggests that this was a strategy widely used by the Med-E-Pops writers. Only 2 Med-E-Pops did not show any instance of abstract rhetors. To evaluate the potential reasons, further reflections are made here to compare each Med-E-Pop with its counterpart Med-E-RA in order to

contrast the process and evolution from the original work to the final product. Henceforth, I will try to obtain further conclusions with the aim of assessing authorial visibility.

From the contrastive analysis of Med-E-RAs and Med-E-Pops texts it can be observed that as Luzón-Marco claims (2000: 138)—drawing on Halliday 1998—in her study of verbs used by researchers in medical English to make comments about their own RAs that:

“These verbs act as a link between an observation or finding and its meaning. In this way they establish a kind of cause-consequence relation between the experiment and its meaning. They only have this relational function when the subject is non-human (Halliday 1988: 174). This non-human subject helps to convey the impression of causality and non-intervention of the researcher. Verbs such as *indicate*, *suggest* or *show* are used to explain and represent physical phenomena, by establishing an internal relationship of cause (i.e. *a* causes me to think *b*): happening *a* is the proof of happening *b* (Halliday, 1998: 175)”

She also points out that the use of these verbs with non-human subjects is a way to present the implications of the study, as my following example illustrates:

<i>Med-E-RA10</i>	<i>Med-E-Pop10</i>
(112) <b>These findings suggest the importance of diagnosing</b> and treating vestibular deficits to reduce the burden of fall-related injuries and deaths. Given the high prevalence of this impairment, notably among the elderly, and the extraordinary costs associated with falls (exceeding \$20 billion annually), screening for vestibular dysfunction in assisted living or nursing home facilities, for example, could be a life-saving and cost effective practice.	Minor says that recent government <b>reports estimate</b> that fatal falls in the elderly cost the U.S. Medicare program nearly \$1 billion in hospital charges, and those injured with broken bones cost an additional \$19 billion.

Also, according to Ferrari’s (2003) study, the use of abstract rhetors contributes to the depersonalisation of discourse by obtaining data as the source of any epistemic judgement. Hyland (1998) stated that abstract rhetors are used to show that the situation described is independent of human agency. I quote an example from my corpora to illustrate this:

<i>Med-E-RA13</i>	<i>Med-E-Pop13</i>
(113) <b>The results of this clinical trial have shown</b> that obese pregnant women may be placed on a healthy, well-balanced, monitored nutritional program during their antepartum course without adverse perinatal outcomes.	The <b>study found</b> that obese pregnant women who followed a well-balanced diet and gained little or no weight had maternal-fetal outcomes that were equal to or better than those who gained substantial weight. <b>The findings appear</b> in the June issue of <i>The Journal of the National Medical Association</i> .

What is more, Muñoz (1999: 351) described a classification of impersonal or agentless strategies that aim to create impersonality in both scientific RAs and in scientific knowledge disseminating articles:

Our analysis is not just limited to the interpersonal component, that is, to the instantiation of the speaker in a discourse (the voice of the scientist or journalist), whose removal would be due to a *wish for objectivity* (Ciapuscio, 1992: 184), but rather investigates the ideational component, the representation of the experience, whose removal of agents does not produce an effect of *objectivity* but one of *objectification*, according to the neologism that Halliday uses. The combination of both effects in different proportions could be evidence of record types ranging from the most *objectified* (+human agentless, +non-human agentless); less *objectified* (+human agentless, -non-human agentless) and not *objectified* (-human agentless, -non-human agentless).<sup>92</sup>

Her approach enlightened the interpretation of my findings since according to the study (1999) the writer wishes to be objective when he/she transfers any academic research process into a popularization. Therefore, the writer translates a research process or research story into an object. From this process, the reader from a more personal to a less personal perspective can decode some structures. Therefore, human agency or intervention in the research process can be more or less easily recognised depending on the lexico-grammatical features. Therefore, according to Muñoz (1999) the use of personal pronouns show agency as more visible and less impersonal, the use of passive as less visible and more personalised and the use of abstract rhetors as less invisible and more impersonal.

Further results were sought to find out whether abstract rhetors used in the Med-E-Pops corpus were just a reflection of the Med-E-RAs rhetorical

<sup>92</sup> This quotation has been translated from Spanish into English.

conventions or if they replaced other lexico-grammatical features used by the researchers in their Med-E-RAs to present scientists' research as an object. If Med-E-Pops writers presented the scientists' research as objects by means of abstract rhetors these writers would make the Med-E-Pops potential audience rely on the research itself and not on what the Med-E-Pops writers say about the research. Therefore, it might be thought that this strategy brings the visibility of the medical researchers to the fore at the same time as it blurs the Med-E-Pops authorial visibility.

Nonetheless, according to my analysis of the corpora on the basis of the theories mentioned above it seems abstract rhetors emphasise the visibility of neither Med-E-RAs authors nor Med-E-Pops writers. The comparison between Med-E-RAs and Med-E-Pops showed that the abstract rhetors identified in Med-E-Pops were originally different lexico-grammatical features in Med-E-RAs even though sometimes the same abstract rhetor was preserved in the information process of adaptation from Med-E-RA into Med-E-Pop:

<i>Med-E-RA1 study</i>	<i>Med-E-Pop1</i>
(114) Despite these caveats, <b>this study has demonstrated</b> that the presence of viral nucleic acids, in particular Herpes PCR group B and CMV, in newborn screening blood samples may be associated with PIHD over a wide range of gestational ages.	Pre-eclampsia, the high blood pressure in pregnancy that can endanger both mother and baby, may be associated with a virus infection of the fetus, an Australian <b>study has found</b> .

This objectification of the research by means of an abstract rhetor does not affect either the researchers' visibility or the writers' visibility. However, it boosts objectivity and makes the reader trust in the objectivity and neutrality of the Med-E-Pops genre itself.

The following example illustrates how Med-E-Pops writers sometimes keep the use of the abstract rhetor but they look for synonyms to include all the possible information. It should be noticed that the following example illustrates how a postmodifying noun group that somehow recaps the topic of research follows the abstract rhetor in the Med-E-Pop:

<i>Med-E-RA23</i>	<i>Med-E-Pop23</i>
(115) In summary, <b>the current report shows that changes</b> in PPFA policies for medical abortion that involve replacing vaginal administration of misoprostol with buccal administration and, later, providing routine antibiotics coupled with a highly monitored, system wide surveillance network were associated with significant reductions in the rates of serious infections.	<b>A large study of the pills used to induce abortion has found</b> that infections are rare but can be made even less common if the pills are taken by mouth instead of vaginally, and with antibiotics.

Other depersonalisation strategies were also found in the Med-E-RAs corpus and later converted into an abstract rhetor:

<i>Med-E-RA19</i>	<i>Med-E-Pop19</i>
(116) After Roux-en-Y gastric bypass surgery 7.65% (355 of 4,639) of patients were diagnosed with urolithiasis compared to 4.63% (215 of 4,639) of obese patients in the control group (p $\leq$ 0.0001). Subjects in the treatment cohort more commonly underwent shock wave lithotripsy (81 [1.75%] vs 19 [0.41%], p $\leq$ 0.0001) and ureteroscopy (98 [2.11%] vs 27 [0.58%], p $\leq$ 0.0001).	<b>Their results showed</b> that while only 8 percent of the Roux-en-Y patients developed kidney stones, they were nearly twice as likely to get this condition as the patients with similar characteristics who didn't have weight loss surgery.

To interpret the data gathered and to draw further conclusions on the use of abstract rhetors in Med-E-Pops, table 27 systematised the data obtained as is shown below with the first column containing a list of the lexico-grammatical realisations used in Med-E-RAs that became abstract rhetors in the corresponding Med-E-Pops:



<i>Lexico-grammatical choices in Med-E-RAs transformed into abstract rhetors in Med-E-Pops</i>	<i>Number of tokens</i>	<i>Percentage</i>
We + active verb	15 (0.68)	14.4%
Research specific nominal groups followed by active verbs	17 (0.77)	16.3%
Passive	15 (0.68)	14.4%
Abstract rhetor unchanged	18 (0.82)	17.3%
Abstract rhetor synonym	34 (1.55)	32.7%
Fake subject of an involuntary act	5 (0.22)	4.8%
<b>Total</b>	<b>104 (4.76)</b>	<b>100%</b>

Table 27. *Lexico-grammatical realisations used in Med-E-RAs that became abstract rhetors in the corresponding Med-E-Pops (total number of tokens, percentage and normalised results per 1,000 words).*

Therefore, my analysis was based on the correspondent recurrent structures found to be sources for the Med-E-Pops abstract rhetors. Nonetheless, the classification of the verbal process is based on Downing and Locke's (1992; 2006) one, this time to reflect on the participants of the expressions found in the Med-E-RAs corpus when discussing the findings from the abstract rhetors analysis in Med-E-Pops. These results have been classified according to table 27 above. This table displays results according to the cline of visibility proposed in this dissertation. Therefore, they have been grouped depending on the original lexico-grammatical source structure of the abstract rhetor found in Med-E-Pops as:

- (i) *We+active verb*;
  - (ii) *Research specific noun phrases followed by active verbs*;
  - (iii) *Passive*;
  - (iv) *Abstract rhetors that remained unchanged in the process*;
  - (v) *Abstract rhetors substituted by a synonym* and
  - (vi) *Fake subject of an involuntary act*.
- (i) *We+active verb*: 15 tokens (0.68 per 1,000 words), that is 14.4% of the total number of abstract rhetors found in the Med-E-Pops corpus, derived from the use of the first person pronouns in Med-E-RAs. Writers seem to have

made this adaptation to objectivise the research in order to focus the potential Med-E-Pops readers' attention on the research itself, on what has been done. It must be remembered here that Med-E-Pops readers "surf the net" and click on specialised websites to read about something they are eager to find out about. The lay audience is hardly ever interested in who conducted the study but in what has been discovered. The following examples are quoted here to illustrate this:

<i>Med-E-RA2</i>	<i>Med-E-Pop2</i>
(115) Therefore, in a population-based prospective cohort study of pregnant women in the Kaiser Permanente Medical Care Program (KPMCP), <b>we examined</b> the risk of preterm delivery associated with the presence of depressive symptoms during pregnancy.	Pregnant women with symptoms of depression are at increased risk for premature delivery, a new <b>study has found</b> .

<i>Med-E-RA26</i>	<i>Med-E-Pop26</i>
(116) The two most recent studies, a case-cohort study and a case-control study, showed no overall increase in the incidence of ovarian cancer after use of clomifene citrate or gonadotrophins. <b>We established</b> a cohort of 54 362 Danish women who attended infertility clinics during 1963-98.	<b>The new study</b> , published online Thursday in the British Medical Journal, <b>did not rule out</b> a cancer link altogether. It suggested that the risk of one form of ovarian cancer may be elevated after use of the popular drug clomiphene (brand name Clomid), though researchers said the finding could have been a statistical aberration.

- (ii) *Research specific noun phrases followed by active verbs*: 17 tokens (0.77 per 1,000 words), that is 16.3% of the total number of abstract rhetors, of research specific noun phrases followed by active verbs were found. As regards the recurrence of the abstract rhetors, this is the second most frequent variable. These instances are one of the most significant features of this corpus. No matching is possible with their Med-E-RAs counterparts because the information these abstract rhetors convey deals with the date and journal of publication, or with the impact it had. The following examples have been selected to illustrate this point:

<i>Med-E-RA1 study</i>	<i>Med-E-Pop1</i>
	(117) <b>The study appears</b> in the March issue of The British Journal of Obstetrics and Gynaecology.

<i>Med-E-RA17</i>	<i>Med-E-Pop17</i>
	(118) <b>The original finding</b> , published in 2003, <b>created a sensation</b> among scientists and the public because it offered the first specific, plausible explanation of why some people bounce back after a stressful life event while others plunge into lasting despair.

(iii) *Passive*: 15 tokens (0.68 per 1,000 words) of agentless passive instances (14.4%) were the origin for 15 of the Med-E-Pops abstract rhetors. Med-E-Pops writers transferred the Med-E-RAs passive constructions into more depersonalised structures modifying a passive whose agent may be easily inferred from the context into another rhetorical convention, the abstract rhetor, which encourages writers' invisibility. By using these structures the Med-E-Pops writers made their potential readership focus on the research process, making their text more objective and neutral. Two examples have been chosen to exemplify this:

<i>Med-E-RA6</i>	<i>Med-E-Pop6</i>
(119) The anastomosis <b>was evaluated</b> for water tightness and patency using antegrade and retrograde urodynamic measurements immediately after surgery and 2 weeks postoperatively.	The <b>study also evaluated</b> the quality of the suture (water tightness and patency) immediately after the operation and 2 weeks after the operation.

<i>Med-E-RA8</i>	<i>Med-E-Pop8</i>
(120) Ten patients with end-stage renal disease who had been receiving haemodialysis <b>were enrolled</b> from <i>Instituto Argentino de Diagnóstico y Tratamiento, Buenos Aires, Argentina</i> , and Department of General, Vascular, and Transplant Surgery, Katowice, Poland, between September, 2004, and April, 2007.	<b>This pioneering study looked</b> at 10 patients from centres in Buenos Aires, Argentina, and Katowice, Poland, enrolled between 2004 and 2007.

(iv) *Abstract rhetors that remained unchanged in the process*: 18 tokens (normalised per 1,000 words as 0.82 and conforming 17.3% of the total amount of tokens) of abstract rhetors used in the Med-E-RAs were preserved in their Med-E-Pops versions. Med-E-Pops writers decided not to substitute the abstract rhetors chosen by the researchers as shown below. Med-E-Pops writers used verbs with stronger meanings in the popular texts such as those exemplified below: *suggested* replace in the Med-E-Pop3 by *allowed* and *suggested* replaced by *concluded* in Med-E-Pop7. Therefore, we must consider that this subtle change should somehow provide more personal versions of the Med-RAs. Therefore, the visibility of the Med-E-RAs is intended to be increased in the Med-E-Pops by using varied lexicogrammatical features.

Med-E-RA3	Med-E-Pop3
(121) Together, <b>these findings suggest</b> that cluster analysis can partially distinguish different clinical forms of TB.	<b>This finding allowed</b> the authors to construct a case-control genetic association study to identify the specific DNA polymorphisms of CCL1 that are associated with the different disease outcomes of TB.

Med-E-RA7	Med-E-Pop7
(122) <b>This collaborative analysis</b> of data from over 45 000 patients who were followed up in cohort studies in Europe and North America <b>suggests</b> that in AIDS-free HIV-1-infected individuals, deferring the start of combination antiretroviral therapy until CD4 cell counts are in the range 251–350 cells per $\mu\text{L}$ leads to increased rates of the combined endpoint of AIDS or death compared with starting in the range 351–450 cells per $\mu\text{L}$ .	<b>The new analysis</b> , which looked at 18 studies with 45,000 American and European patients, <b>concluded</b> that starting earlier saved more lives, so treatment should begin when the count falls to 350.

(v) *Abstract rhetors substituted by a synonym*: 34 tokens (1.55 per 1,000 words), that is 32.7%, showed that the Med-E-Pops writers preserved the use of this structure with a synonymous abstract rhetor. In these cases the writers were just repeating the pattern chosen by the Med-E-RAs author and introducing a subtle change that should provide a somewhat more personal version of the RA. Two examples illustrate this point:

<i>Med-E-RA18</i>	<i>Med-E-Pop18</i>
(123) <b>The results of the current study provide</b> preliminary data to support several conclusions. VIT significantly reduces the size and duration of LLRs to stings. The clinical improvement in LLRs observed with VIT improves further during 2 to 4 years of treatment. Patient satisfaction with VIT was over 90%. Additional studies are needed to confirm the efficacy of VIT for prevention of LLRs and to determine the optimal duration of treatment.	The same bee and other insect venom shots that doctors use to prevent deadly systemic reactions to insect stings can also tone down large local allergic reactions that, while not dangerous, can be painful and inconvenient, a Johns Hopkins <b>study shows</b> .

<i>Med-E-RA28</i>	<i>Med-E-Pop28</i>
(124) Finally, <b>our data may raise concern about clinical situations</b> that mobilize hematopoietic, and possibly endothelial, progenitors because these cells might induce unintended adverse effects.	Dr. Taylor believes these <b>study results</b> may potentially open new research strategies, which may take into account the study of circulating endothelial cells and progenitor cells in paediatric patients.

(vi) *Fake subject of an involuntary act.* There were only 5 structures (0.22 per 1,000 words and 4.8% of the total amount) from Med-E-RAs out of 104 (4.76 per 1,000 words) abstract rhetors tokens found in Med-E-Pops that did not belong to any of the most recurrent structures. They could have been associated to type (ii). However, contrary to type (ii) these fake agents found in Med-E-RAs referred to diseases, natural processes related to the research topic. Therefore, they have been gathered under the label fake subjects of *involuntary processes*. Two examples have been included here to illustrate this point:

<i>Med-E-RA15</i>	<i>Med-E-Pop15</i>
(125) Prevalences in our study are substantially higher than those reported in other studies <sup>24–28</sup> done in China from 1982 to 2004 in which different methods were used and the reported overall prevalences of mental disorders were from 1.1% to 9.1%.	More than 17 percent of Chinese adults have a mental disorder, <b>the study concluded</b> —far more than the 1 to 9 percent reported in studies done between 1982 and 2004.

<i>Med-E-RA25</i>	<i>Med-E-Pop25</i>
(126) However, the effectiveness of condoms in preventing the transmission of herpes simplex virus 2 (HSV-2) is less certain.	Although <b>studies indicate</b> that consistent condom use reduces the spread of HIV and other sexually transmitted diseases, the effectiveness of preventing the transmission of HSV-2 through condom use is less certain.

The depersonalisation process studied in the contrastive analysis of Med-E-RAs and Med-E-Pops seems to shed new light on the rationale behind abstract rhetors usage. They seem to pursue a global communicative purpose in the text and also in the genre as a whole. Observing whether Med-E-Pops writers become more or less visible in their texts, I have noticed that the writers' search for objectivity is more significant than either Med-E-RAs authors search for visibility or Med-E-Pops writers' own search for it. This would add a contribution to previous studies such as Ciapuscio (1992) or Muñoz (1999): Abstract rhetors are kept from Med-E-RAs in their subsequent scientific dissemination articles or popularizations to preserve the reader's trust in the research process. The research is then presented as an objective and neutral fact apparently devoid of human intervention and consequent potential manipulation.

### 3.4.3 Concluding remarks

To interpret the data obtained, this section turned once more to traditional and previous studies regarding rhetorical conventions and the transitivity system. The specific aim of this section was to interpret one of the most recurrent lexico-grammatical features found in this corpus-driven study, that is, inanimate subjects related to the research. These constructions are referred to here as abstract rhetors because their use allows explicit impersonal distancing. This usage creates an effect of apparent removal of the agents or actors that conduct the research. Nonetheless, these abstract rhetors are in fact abstract nominal elements that seem to lead the research process.

The abstract rhetors found in the corpora are not the result of complex syntactical processes or grammatical metaphors. They are lexico-grammatical constructions that nominalise the original personal projection of the researchers in the Med-E-RAs. Therefore, their main aim is to create impersonality. The impersonality created in Med-E-RAs and Med-E-Pops with the use of abstract rhetors was analysed at first as a search for invisibility. Firstly, the use of abstract rhetors was studied in Med-E-RAs. Secondly, the recurrence of abstract rhetors

was studied in Med-E-Pops. Finally, a contrastive study was conducted to observe whether the use of these impersonal constructions in Med-E-Pops was a reflection of their corresponding Med-E-RAs or their use aimed at creating a greater communicative effect.

From the analysis of the corpora it was observed that the frequency of abstract rhetors in Med-E-RAs was lower than in Med-E-Pops as table 28 summarises:

	<i>Study</i>	<i>Results</i>	<i>Findings</i>	<i>Others</i>	<i>Total</i>
Med-E-RAs	144 (0.79)	88 (0.48)	65 (0.35)	30 (0.17)	327(1.79)
Med-E-Pops	50 (2.28)	10 (0.45)	12 (0.54)	32 (1.4)	104(4.76)

Table 28. *Use of abstract rhetors in Med-E-RAs and Med-E-Pops. Total number of tokens and normalised results per 1,000 words.*

It should be pointed out that the frequency in Med-E-RAs is 1.79 per 1,000 words whereas in Med-E-Pops the frequency is 4.76 per 1,000 words. These data may be assessed as a contribution to previous studies (such as Ciapuscio 1992a&b and Muñoz 1999) dealing with the need to create objectivity in knowledge dissemination articles. These scholars claimed that the popular articles seek objectivity in the text. These data also support the view that the writers of these articles transform the marked agency (the clearest trace of visibility carried out by personal pronouns followed by active verbs), impersonal constructions (passive constructions), and abstract rhetors (the most impersonal structures and most invisible cline of writers' visibility) into objects.

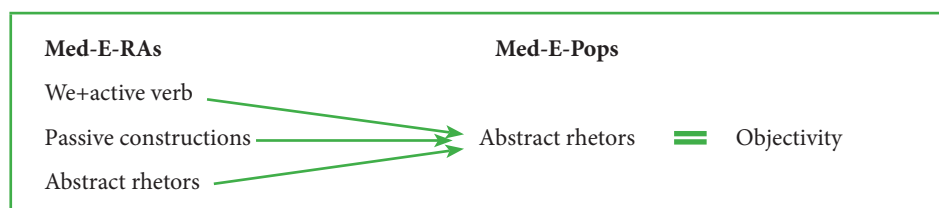


Figure 6. *Graphic transformation of Med-E-RAs lexico-grammatical variables in search of Med-E-Pops objectivity.*

It could be interpreted from the results that Med-E-RAs authors become even more depersonalised due to the fact that all the lexico-grammatical features studied in the cline of visibility proposed by this piece of research are transformed

into abstract rhetors in the process of adaptation from Med-E-RAs into Med-E-Pops. In other words, the research processes being carried out by the researchers displayed as fake agents, as syntactic subjects, agentless constructions or as deeds conducted by the researchers themselves become objectivised through their replacement by abstract rhetors. Yet, this is what the potential audience, lay readers and specialised readers want to read about and therefore know about. By doing this the Med-E-Pops writers generate a reliable atmosphere of objectivity. No attention is paid either to the researcher or to Med-E-Pops writers as information mediators. However, concern is raised around what is being done in the medical field that the readers are interested in. Nonetheless, writers do not neglect the researchers' authorship, because Med-E-Pops combine these depersonalisations that create objectivity with direct and continuous reference to the authors of Med-E-RAs as shown in the previous sections. Besides, this section findings do not contradict findings about Med-E-Pops writers, making Med-E-RAs authors quite visible in their popular texts by choosing realisations such as those discussed for instance in section 3.3.2. As mentioned above when discussing how some abstract rhetors were originated from passive constructions, Med-E-Pops writers, concerned about the communicative intention of their texts, introduce subtle changes that provide a somewhat more personal version of the Med-E-RA in spite of their intention of objectivising the research displayed in the Med-E-Pops (see section 3.4.2).

In general, as introduced above, the use of abstract rhetors should be interpreted as a strategy to build trust about the information reported in the Med-E-Pops and therefore to build trust about the Med-E-Pops genre itself. However, although Med-E-Pops writers do not increase explicit authorial visibility, they choose to channel their "voices" into abstract rhetors as a generic convention choice. Therefore, these features create a generic perception, which in a way is created by the channelling (or absence) of the Med-E-Pops and Med-E-RAs writers' voices.

### **3.5 REPORTING SEQUENCES**

One of the main features that characterises the Med-E-Pops corpus under study is the frequent use of reporting sequences (introduced in section 2.2.2), which refers to the original Med-E-RA and their researchers as Med-E-Pops unique source of knowledge. The constant reference to the Med-E-RA seems to justify the nature



of the Med-E-Pop as electronic JRVs (Nwogu 1991, the *R* standing for reported). Results from the corpus-driven analysis show that direct and indirect quotations together with the citation sequence *according to* are frequently repeated in the popularizations corpus. One may wonder why Med-E-Pops writers include so many references to external voices. It may be agreed that academics cite and quote previous studies when they are writing RAs for publication purposes in order to increase the credibility of their research and to follow the genre conventions. In other words, scholars bring senior research voices to RAs to suit the generic conventions and to increase the acceptance of the scientific approach of their research.

In the Med-E-Pops corpus, other researchers' voices are also cited and reported while the voice of the Med-E-Pops writer seems to distance itself from the text. Therefore, the data show that Med-E-Pops writers tend to step back from the information gathered in the text by setting a distance from the Med-E-RAs by using the sequence *according to* (e.g. *according to a study/according to the researchers*)—that is *according to others* or *according to them*. Moreover, results also show that in Med-E-Pops multiple voices other than those of the Med-E-RAs authors have been brought into the Med-E-Pops.

Therefore, the aim of this section is to study the purposes of Med-E-Pops writers when they bring the *presence of others* into their texts, since this piece of research initially conceived the use of reporting as the most visible choice carried out by Med-E-Pops writers because they choose what to report, from whom and how—and therefore reporting should be interpreted as the most discernible trace of the presence of Med-E-Pops writers and therefore visibility. To carry out this exploration about the presence of others apart from the Med-E-Pops writers', I first studied the presence of several voices or polyphony. Afterwards, section 3.5.2 analyses formal aspects of the reporting verbs used to bring others' voices to Med-E-Pops. Section 3.5.3 deals with the assumption that reporting verbs are thought to evaluate the information they report and therefore the voice of the writers who use these features should be realised and therefore "heard". This part of the discussion of findings closes with an interpretation of reporting sequences in Med-E-Pops from the angle of the (in)visibility of Med-E-Pops writers. Finally, section 3.5.4 concludes this dissertation approach to reporting sequences.

In general, I intended to observe whether these writers construct their Med-E-Pops reporting information from others in a certain way that would give away the intervention and presence of the Med-E-Pops writer, that is, some visibility

traces. The potential evaluation (or scarcely visible evaluation) that Med-E-Pops writers carry out at a discursive level has, above all, a purpose that in some way might be inherent to the Med-E-Pops generic and rhetorical conventions.

### 3.5.1 Disguised writers' acts

229 instances of reporting (direct and indirect projections and the citation sequence *according to*) were found in the corpus under study (10.48 per 1,000 words). Since writers are meant to summarise and disseminate Med-E-RAs findings, their role therefore seemed to be merely to report. Nevertheless, it could be considered that no lexico-grammatical features are neutral or unintended. Some instances are introduced below to exemplify the reporting sequences studied in this dissertation:

(125) More people would benefit and it would be more cost effective if HIV treatment with antivirals started earlier in countries like South Africa where medical resources are limited, **said researchers**. [Med-E-Pop36]

(126) "As a reference, most people know that lead exposure is harmful to children, and the effects we saw in terms of the association between PAH exposure and decreased IQ scores are comparable with low-level lead exposure, which is of concern because IQ level is a known predictor of a child's future academic performance," **explained study author** Frederica P. Perera. [Med-E-Pop32]

(127) Researchers have identified a new benchmark for starting drug treatment for AIDS, **according to a report** published online last week in the journal *Lancet*. [Med-E-Pop 7]

The results emerging from this corpus-driven approach to Med-E-Pops has led this discussion of findings to explore first something that could to some extent be approached from the concept of polyphony. The results obtained from the manual analysis of the texts reveal the presence of a polyphonic play that may signal a hierarchy of voices that is different from the Med-E-RAs research which in turn reveals the Med-E-Pops writers' as the less audible voice. Therefore, I interpreted from the data obtained that even though it is the Med-E-Pop writer who creates his or her text, and therefore the one who chooses what to report, for what purpose and how, this writer may have various communicative purposes by disguising his or her own voice and hiding it at the end of a *hierarchy of voices*.

This section then aims to explore whose voice is being perceived in the Med-E-Pop. See for example:

(128) **Dr. Karen Loeb Lifford, director of family planning at Boston University School of Medicine, said** she had already changed her clinic's practice to use the buccal route and include antibiotics.

"I do think the antibiotics will become the standard of care in the United States," Dr. Lifford said, adding that Planned Parenthood had an enormous database of patients who were very much like other women seeking abortions, so the results would probably apply to most patients. [Med-E-Pop23]

I borrow the term *disguised writer acts* from Thompson and Ye's (1991) study on reporting in order to refer to the polyphony inserted in Med-E-Pops by their writers. Med-E-Pops writers bring trustworthy voices for the contextualisation of the research reported in the Med-E-Pops. Reporting other voices, outside of the research process and also outside of the final Med-E-RA, is a highly recurrent practice in my Med-E-Pops corpus. One may wonder whether Med-E-Pops writers are forced to emphasise the significance of the research they write about or, on the other hand, whether they are free to decide how to design and write their Med-E-Pops. This reflection inspired me in the analysis of these other voices that seem to have been brought into the Med-E-Pops in order to reinforce the Med-E-RAs research and to contribute to the positive status of the researchers and their work.

All the Med-E-Pops reported, by means of direct and indirect reporting sequences, pieces of information said or written by the authors of the corresponding Med-E-RAs. Besides, a third voice from a different institution or external researcher was introduced in eleven Med-E-Pops to enhance the findings or to question the Med-E-RA findings first and mitigate them later. For instance, some Med-E-Pops justify with this third voice, different from the voice of Med-E-Pops writers or the voice of Med-E-RAs researchers, why actual drug treatments questioned by Med-E-RAs deserve further supervision, as these Med-E-RAs proposed (see for instance Med-E-Pop17, Med-E-Pop23 and Med-E-Pop27). Therefore, on the basis of the results obtained, I think it is important to determine the potential communicative intention of bringing a *third voice* into the Med-E-Pop text. That is, the results obtained raised concern about the importance of reflecting on whose voice is being brought into the Med-E-Pops and for what purpose. Med-E-Pops writers report these experts' opinions with direct

projections from informal interviews as my informant pointed out (see Chapter 2). Two voices were reported indirectly from an editorial and a news release. These scholars' voices were always introduced by a reference to their professional status and occupational affiliation as shown in the following example:

(129) "For years, primary ovarian insufficiency has been known to put women at risk of low bone density," **said Duane Alexander, MD, director of NIH's Eunice Kennedy Shriver National Institute of Child Health and Human Development (NICHD), Rockville, Maryland.** "The new study helps explain why some women with the condition are more likely to develop low bone density. It also provides strong evidence that by diagnosing the condition early, replacing deficient oestrogen, and getting adequate calcium and vitamin D, these women can protect their bones from weakness and fractures." [Med-E-Pop22]

This practice praises what has been said in the Med-E-Pop, gives prestige to the status of the information reported in the Med-E-Pop and makes the potential reader believe that what he/she is reading is completely scientific and truly reliable. Two examples are quoted here to illustrate this characteristic feature of Med-E-pops:

(130)"This study is very interesting. It demonstrated that these rare cells detected in the blood of adult cancer patients are also important in paediatric cancers," **said James L. Abbruzzese, MD, FACP, University of Texas M. D. Anderson Cancer Center, Houston, Texas.** [Med-E-Pop28]

(131)**Michael Jerrett, an associate professor of environmental health sciences with the School of Public Health at University of California, Berkeley, expressed little surprise at the findings, and suggested that** an association between in-utero PAH exposure and a lower IQ is "certainly plausible." "Children exposed to prenatal or in-utero air pollution from traffic oftentimes have lower birth weights, somewhat smaller head circumferences, and a number of adverse outcomes," he noted. "There's certainly enough there to suggest an effect. And I think any one of those outcomes—if they happen early enough in life—can affect development through childhood and exert an impact on intelligence," Jerrett said. [Med-E-Pop32]

In this case, more than one expert's positive opinion has been introduced into the same Med-E-Pop. This takes place in Med-E-Pops dealing with socially accepted stereotypes such as the Mediterranean diet (Med-E-Pop16) or how teenagers are exposed to tobacco if they surf the Internet (Med-E-Pop33). Different senior voices

may have been brought into the Med-E-Pops to boost the scientific angle of the research displayed by the counterpart Med-E-RAs as the following examples show:

(132) “You see what is called a dose response. The more stringently you follow the Mediterranean diet, the better the outcome,” **noted Dr. Gary Kennedy, director of geriatric psychiatry at Montefiore Medical Center in New York City.**

Alice Lichtenstein, Gershoff Professor of Nutrition Science and Policy at Tufts University in Boston, said: “It’s encouraging to see the results—those reporting the healthier dietary pattern seem to do better.”  
[Med-E-Pop16]

(133) “That kids are being exposed to tobacco products in all facets of their lives is not a surprise,” said **Erika Sward, director of national advocacy for the lung association.** “And I’m not surprised that the tobacco companies are on the cutting edge. They’re always creative in finding new ways to target and prey on kids.”

Sward said the good news was that the study found that not all of the content teens were viewing was pro-tobacco, but the study highlights the need for legislation regarding how tobacco products are promoted online, and that tobacco-control programs should design counter-marketing methods for the Internet.

“This study starts to increase awareness of potential exposure to tobacco messages,” said pediatrician Dr. Deborah Moss, from Children’s Hospital of Pittsburgh, who added that studies have shown tobacco exposure in movies can make teens more likely to smoke, and that Internet exposure may have the same effect. [Med-E-Pop33]

Nonetheless, there are also 4 tokens of different voices that in the same Med-E-Pop display different opinions towards an apparently not compelling piece of research. See the example:

(134) “This gene/life experience paradigm has been very influential in psychiatry, both in the studies people have done and the way data has been interpreted,” said Dr. Kenneth S. Kendler, a professor of psychiatry and human genetics at Virginia Commonwealth University, “and I think this paper really takes the wind out of its sails.”

**Others said the new analysis was unjustifiably dismissive.** “What is needed is not less research into gene-environment interaction,” Avshalom Caspi, a neuroscientist at Duke University and lead author of the original paper, wrote in an e-mail message, “but more research of better quality.”

**Dr. Caspi and other psychiatric researchers said** it would be equally premature to abandon research into gene-environment interaction, when brain imaging and other kinds of evidence have linked the serotonin gene to stress sensitivity.

“This is an excellent review paper, no one is questioning that,” said **Myrna Weissman, a professor of epidemiology and psychiatry at Columbia**. “But it ignored extensive evidence from humans and animals linking excessive sensitivity to stress” to the serotonin gene. [Med-E-Pop17]

Table 29 shows that four Med-E-Pop websites show this practice of bringing other voices external to the research itself in order to enhance the research carried out by the Med-E-RAs authors. *Health Day News* is the specialised web site that deploys this trust-increasing technique with a higher frequency. Information has been gathered in the following table:

<i>Med-E-Pop</i>	<i>Site of publication</i>	<i>External voices reinforcing the research</i>	<i>External voices mitigating the potential weakness of the research</i>
8	Medical News Today	1	
16	Health Day News	2	
17	NY Times Health Guide	3	1
22	DocGuide	1	
23	NY Times Health Guide	3	2
27	DocGuide	1	1
28	DocGuide	1	
29	Health Day News	2	
32	Health Day News	1	
33	Health Day News	2	
39	Health Day News	1	

Table 29. *Med-E-Pops that include voices other than the researchers' or writers' and its source of publication/E-journal.*

More than the 25% of the Med-E-Pops show tokens of what this dissertation considers to be *disguised writer's acts* or masked actions. It could be said therefore that Med-E-Pops writers want the potential readership to believe and therefore

trust in the information displayed first in the Med-E-RA and consequently in its counterpart Med-E-Pop. This might be seen as a guideline in the *Health Day News* website convention. Nonetheless, as shown in table 29 above, almost all the electronic publications that comprise the Med-E-Pops corpus share that convention.

As regards the visibility of the Med-E-Pop writer, it is difficult to assess how invisible the Med-E-Pop writer becomes by bringing a third voice to the Med-E-Pop. It seems clear that the communicative intention of the Med-E-Pop writer is to highlight the Med-E-RA research and to mitigate potential weak points of that previous research. By so doing, Med-E-Pops writers support the Med-E-RA and apparently detach themselves from the text by presenting it as objective and neutral.

This conscious choice is, in my view, one of the most visible traces in this depersonalised scenario of the Med-E-Pops writers' invisibility. The willingness of bringing other voices into the Med-E-Pops has a dual objective. Firstly, to hide the Med-E-Pops writers' visibility because these writers choose to create a hierarchical polyphony of expert voices that deserve to be heard more loudly than the Med-E-Pops writers' voices. Secondly, to build trust about the Med-E-Pop and the Med-E-RA although the data analysed show that Med-E-Pops writers are not totally devoid of a voice. Med-E-Pops choose to have a disguised voice that displays their texts as reliable by bringing additional reliable sources of knowledge. Moreover, Med-E-Pops writers also highlight that the research carried out in the Med-E-RAs deserves support from external expert voices in the field.

It could then be concluded that, by means of reporting sequences, the voice which is brought to the Med-E-Pops by the Med-E-Pops writers is either the voice of Med-E-RAs authors, as it is explored in sections 3.5.2 and 3.5.3, or a third voice external to the Med-E-RAs research which is intended to reinforce Med-E-RAs researchers visibility and their research—a process which in turn creates a deliberate absence of Med-E-Pops writers' visibility.

### **3.5.2 Voice features in reporting verbs**

This subsection studies whether Med-E-Pops writers are visible in their texts by evaluating the research reported with the use of certain reporting verbs. If so, the various attitudes shown towards the research reported would reveal different degrees of Med-E-Pops writers' visibility.

For that purpose, I first observed whether the difference between direct and indirect reported sequences, and the tense of the reporting verbs brought about a significant difference as far as Med-E-Pops writers' visibility is concerned. As regards tense, Thompson and Ye (1991: 378) wrote that: "If a writer writes, 'Smith analyses the results...' the choice of present tense indicates, amongst other things, that the writer is referring to the author's text, since it is a convention that the contents of a text can be reported using the present tense no matter what the tense used in the original text." These researchers add that certain research process verbs are rarely used in the *text-referring* present tense to report another researcher's acts. They add that "(i)t is more accurate to say that (amongst other things) the choice of past tense places the focus on the research process rather than on the authors' textual description of that process" (1991: 378). In the Med-E-Pops corpus, the differences as regards tense are not enlightening. Actually, the analysis distinguished between tenses in order to explore any significant difference but no differences were found between reporting instances. No remarkable distinctions in the use of tense were found between the two verbs that were used in the Med-E-Pops corpus in present and past tense. These verbs were *say* and *note*. The following table gathers the total number of instances distinguishing present and past reporting verbs:

<i>Reporting verbs used</i>	<i>Number of instances</i>	<i>Found in Med-E-Pops numbered</i>
SAID	100	1, 2, 4, 5, 6, 9, 13, 15, 16, 17, 20,22, 23, 25, 26, 28, 29, 30, 31, 32, 33, 38, 39
SAY	31	8, 11, 14, 15, 18, 19, 30, 32, 34, 35, 36, 37
WROTE	13	21, 24, 25, 26, 33, 34, 38, 40
FOUND	12	4, 22, 24, 29,31, 32, 33, 34, 39
ADDED	11	5, 12, 16, 19, 22, 23, 26, 33,36
CONCLUDED	10	8, 12, 13, 17, 22, 24, 25, 26, 32, 38
NOTED	9	4, 16, 29, 32, 34, 39
EXPLAINED	6	19, 29, 30, 32, 39
REPORT	5	14, 17, 19, 32, 34
SUGGESTED	5	3, 21, 29, 32, 33
ACNOWLEDGED	3	1, 10, 15
BELIEVED	2	28, 39
NOTES	4	7, 18, 35, 37



AGREED	2	16, 17
CAUTIONED	2	26, 32
PROPOSED	1	8
POINTED OUT	2	28, 32
ADVISED	2	29, 33
CAUTIONED	2	14, 28
EMPHASISED	1	14
ASSUMED	1	19
STATED	1	13
ESTIMATED	1	23
RECOMMENDED	2	33, 35
TOLD	1	36
<b>Total of reporting tokens</b>	229	

Table 30. *Distribution of reporting tokens according to tense and Med-E-Pop number.*

The following examples aim to illustrate that writers' visibility was not affected by present and past reporting verbs, as instances of the two verbal tenses were found in the same Med-E-Pop as shown below:

(135) The burden of mental illness in China has been seriously underestimated, the authors of a new study **say**. [Med-E-Pop15]

(136) The most disturbing aspect of their research, the authors **said**, was that, among those who had a diagnosable mental illness, 24 percent said they were moderately or severely disabled by it. But only 8 percent had ever sought professional help, and only 5 percent had ever seen a mental health professional. [Med-E-Pop15]

(137) "The number of people with dementia is increasing as our population ages, and we will face a growing public health problem of elderly drivers with memory loss," study author Jeffrey Dawson **noted** in an American Academy of Neurology news release. [Med-E-Pop4]

(138) Golden and his team plan to investigate why patients differ in their response. Nonetheless, he **notes** that this improvement is still enough to warrant a larger trial of the therapy. [Med-E-Pop4]

The second variable that was observed was the use of direct or indirect projection when writers used reporting in Med-E-Pops. Within the framework of genre analysis (Bazerman 1988; Swales 1990; Bhatia 1990; Dudley-Evans 1994), I decided to study more closely the direct and indirect projections and their distribution along the different moves of the Med-E-Pops expecting to obtain illuminating data to interpret the potential meaning of reporting verbs. The data obtained from this analysis are gathered in table 31 below:

<i>Med-E-Pops moves</i>	<i>Direct projections</i>	<i>Indirect projections</i>	<i>Total</i>
Introduction	25 (1.14)	22 (1.00)	47 (2.14)
Contextualisation of the research	9 (0.41)	14 (0.64)	23 (1.05)
Further results	31 (1.41)	31 (1.41)	62 (2.82)
Conclusions	61 (2.79)	36 (1.64)	97 (4.43)
Total	126 (5.76)	103 (4.71)	229 (10.47)

Table 31. *Total number of instances direct and indirect projections per moves and normalised per 1,000 words.*

Table 31 suggests that there is no significant difference between the figures as regards the total number of direct and indirect projection instances in Introduction, Contextualisation and Result moves. Needless to say the data from the total shows that it is basically Further Results and Conclusions that Med-E-Pops writers report on. The data of the *Introduction* of Med-E-Pops, the Contextualisation of the research and the Further Results move are similar as far as indirect and indirect projections results are concerned. As a matter of fact, the Results sections display the same number of instances. Some examples from direct and indirect projections illustrate this point:

(i) Introductions:

(139) BRONX, NY—April 21, 2009—A combination of topotecan and docetaxel appears to produce clinical benefit for patients with recurrent and metastatic endometrial and ovarian cancers, and are also well tolerated, according to a phase 2 study published online in the journal *Gynecologic Oncology*. “Women with recurrent gynecologic cancers have often had multiple rounds of chemotherapy, which can cause tumour cells to develop resistance to these drugs,” **said lead author** Mark H. Einstein, MD, Albert Einstein College of Medicine, Yeshiva University, Bronx, New York. [Med-E-Pop9]

(140) VALHALLA, NY—June 2, 2009—A new study challenges the prevailing wisdom that to improve pregnancy outcomes, all women, even those who are obese, should gain weight during pregnancy. **The study found that** obese pregnant women who followed a well-balanced diet and gained little or no weight had maternal-fetal outcomes that were equal to or better than those who gained substantial weight. The findings appear in the June issue of *The Journal of the National Medical Association*. [Med-E-Pop13]

(ii) Contextualisation:

(141) “As a reference, most people know that lead exposure is harmful to children, and the effects we saw in terms of the association between PAH exposure and decreased IQ scores are comparable with low-level lead exposure, which is of concern because IQ level is a known predictor of a child’s future academic performance,” **explained study author** Frederica P. Perera, a professor in the department of environmental health sciences with the Mailman School of Public Health at Columbia University in New York City. [Med-E-Pop32]

(142) The new report, by several of the most prominent researchers in the field, does not imply that interactions between genes and life experience are trivial; they are almost certainly fundamental, **experts agree**. [Med-E-Pop17]

(iii) Results:

(143) “We found that only a small proportion of Internet sites visited by adolescents contained tobacco messages. The significance of these messages in social networking and their impact on adolescent tobacco attitudes and use remain unclear,” **wrote the study’s authors**, from the Julius B. Richmond Center of Excellence at the American Academy of Pediatrics in Elk Grove Village, Ill. [Med-E-Pop33]

(144) Researchers suspected that putting pills into the vagina was somehow contributing to infections. **Planned Parenthood found** that after the combined changes were made—switching from the vaginal to the buccal route and routinely giving antibiotics—infection rates dropped considerably, to 0.06 per 1,000 abortions, from 0.93 per 1,000. [Med-E-Pop23]

The most remarkable difference lied in the total number of instances found in the Conclusions move. In the Conclusions move of the Med-E-Pops, writers seem to prefer the use of direct projections rather than indirect projections (61 tokens

of direct projections and 36 tokens of indirect projections, that is, 2.79 and 1.64 per 1,000 words respectively). The high frequency of direct projection makes Med-E-RAs researchers more visible and therefore this practice makes Med-E-Pops writers more invisible. The direct words from the Med-E-RAs researchers seem to establish a more direct reference to the source of knowledge. Therefore, Med-E-Pops seem to establish a scarcely invasive content and therefore carry out scarce linguistic mediation between the Med-E-RA and the resulting Med-E-Pop. Besides, bringing voices from others, Med-E-RA researchers or other scientists related to that area of medical investigation, enables writers to mitigate the potential weak points of the Med-E-RAs research and also to argument the credibility of that piece of research by avoiding getting involved with personal judgements and acquiring any kind of commitment or responsibility for that research. It is not difficult to find in Med-E-Pops the combinations of both direct and indirect projections, above all, in the Conclusions move as shown in one of the following examples gathered below:

(145) “Depression during pregnancy is frequently dismissed or underdiagnosed,” **said Dr. De- Kun Li, the lead author.** “I hope our study will raise a red flag.” [Med-E-Pop2]

(146) And, **he said,** it’s important to set up a support system and connect with other families of children with autism. “You need to have an outlet and some form of respite so that autism doesn’t consume you,” said Grossman. Divorce rates are high in families with an autistic child, so try to stay connected to your spouse, he said. “The way you see autism will be different, so you need to be patient with each other, but stay involved,” he advised. [Med-E-Pop29]

All in all, the data shows that Med-E-Pops writers prefer the use of direct projections (5.76 per 1,000 words) to the use of indirect projections (4.71 per 1,000 words). Even though the frequency of both projections should be considered as high there are no remarkable differences between the use of direct and indirect projections.

To continue with the study of general aspects of reporting in my Med-E-Pops corpus this study now turns to the observation of reporting verbs. The observation of the potential meaning of the verbs was approached from the most representative tokens (see table 32) in order to evaluate the possible attitude or role of the writer. However, the amount of different results obtained in this corpus-driven study suggested the introduction of an in-depth analysis of each verb for the sake of clarity. Therefore, this section now deals with several

approaches to the study of the use of reporting verbs and the potential additional communicative purpose regarding each Med-E-Pops.

In a closer analysis to verbal acts a sample was selected from the total token list for closer analysis to find out: a) whether the reporting sequences constitute a manifestation Med-E-Pops writers' voice, if so, b) what the role or attitude of Med-E-Pops writers towards the reported information is. See the distribution of the reporting sample:

<i>Reporting verb</i>	<i>Number of tokens</i>	<i>Normalised results per 1,000 words</i>	<i>Percentages over the total number of reporting verbs</i>
SAID	131	5.99	57.2
WROTE	13	0.59	5.6
NOTED	13	0.59	5.6
FOUND	12	0.54	5.2
ADDED	11	0.5	4.8
CONCLUDED	10	0.45	4.3
EXPLAINED	5	0.22	2.18
REPORTED	5	0.22	2.18
SUGGESTED	5	0.22	2.18

Table 32. *Frequency of the most representative reporting verbs in Med-E-Pops.*

a) As far as the impact of each semantic realisation is considered, the most representative verbs were: *said (say)*, *wrote*, *note (noted)*, *found*, *added*, *concluded*, *explained*, *reported* and *suggested*. As table 32 shows no distinction was made, inspired by the results introduced above, regarding the absence of significant differences regarding the tense of the reporting verbs in the corpus under study.

We consider that when Med-E-Pops writers choose to report the academic information indirectly they do not change the information displayed in any possible way. What they choose is the reporting verb that will introduce the chunks of information. Undeniably, they choose what information should be gathered and shown to the potential readership. The choice between direct or indirect projections seems to lie mainly in the source of information. If the text is quoted, writers use reported speech and if the source is an informal interview they use direct projections such as the informant stated (see Chapter 2). That

said, it cannot be overlooked that Med-E-Pops writers were the ones who chose what reporting verb would introduce the Med-E-RAs information in the Med-E-Pops. That choice of reporting verb seems to be supported by a certain rhetorical intention. To observe what attitude the writer may have had when introducing the Med-E-RAs information, if any, I now analyse how Med-E-Pops writers report what the researchers said—while Med-E-Pops writers point to the Med-E-RAs researchers as the *sayers*.

Table 32 above shows that the most frequent verbal process with an explicit *sayer* (being named by their proper names, by a nominal group or by a deictic) that projects what is said in my Med-E-Pops corpus is the verb *said* (and *say*). 131 tokens (5.99 per 1,000 words) were found in 32 Med-E-Pops. Only 8 Med-E-Pops did not use *say*. This verb introduces information in a very objective way. With the use of *say* we cannot infer the writers' interpretation or non-interpretation of the information. In other words, we can only interpret his or her attitude according to the information consciously selected to appear on the Med-E-Pop. The main function of *say* is to provide further evidence for what is being simply reported. See here for examples:

(147) The burden of mental illness in China has been seriously underestimated, the authors of a new study **say**. [Med-E-Pop15]

(148) FRIDAY, July 17 (HealthDay News)—Rapid evolution of the male sex chromosome could result in its disappearance within a few million years. But that won't mean the end of males, **say** U.S. scientists. [Med-E-Pop30]

13 tokens of the verb *wrote* were found in 8 Med-E-Pops. The normalised result per 1,000 words is 0.59. This verbal process directly builds bridges towards the researchers' Med-E-RAs. The writers are apparently willing to bring the reader and the source of knowledge together without any kind of intervention or mediation. The writer then lays all responsibility and prestige at the same time on the research author. The following examples exemplify this point:

(149) "Epidemiological evidence is consistent with an increased risk of stroke associated with PFO but data are not conclusive. The paucity of evidence supporting PFO as the mechanism for cryptogenic stroke has left many questions in the field unanswered, including when PFO repair is appropriate," **the authors wrote**. [Med-E-Pop24]

(150) "The burden imposed on those seeking to limit dietary phosphorous and potassium could be ameliorated by more complete food labeling by manufacturers," **the authors wrote**. [Med-E-Pop34]

*Noted* (and *note/s*) was found 13 times in 10 Med-E-Pops (0.59 per 1,000 words). The potential connotation of *noted* seems to be more explicit than *said* or *wrote* due to the fact that its use forces the potential reader to stop and think or at least pay attention to what the researchers highlighted in their research or in their research process since that information has been remarked with the use of *note*—rather than with the use of the reporting verbs *say* or *write*. In general, its usage in the Med-E-Pops corpus denotes an explicit shift towards the researcher and not to the Med-E-Pop writer. The following examples illustrate this reflection:

(151) The question of when to start therapy has been a “swinging pendulum,” **notes** an editorial accompanying the study. [Med-E-Pop7]

(152) “You see what is called a dose response. The more stringently you follow the Mediterranean diet, the better the outcome,” **noted Dr. Gary Kennedy**, director of geriatric psychiatry at Montefiore Medical Center in New York City. [Med-E-Pop16]

There are 12 tokens of *found* in 9 Med-E-Pops (0.54 per 1,000 words). When Med-E-Pops writers use the verb *found* they are once again pointing at the authors as the source of knowledge production and claiming. Writers simply display the results obtained by the medical researchers when conducting their study without judging or evaluating them as shown in the examples below:

(153) The drivers with Alzheimer’s committed an average of 42 safety mistakes, 27 percent more than the average of 33 safety errors made by those without Alzheimer’s. Drivers with Alzheimer’s who did better on the cognitive tests made fewer on-road safety mistakes, **the team found**. [Med-E-Pop4]

(154) **The researchers found** that patients who were disillusioned about their faith or had a negative religious or spiritual outlook were more likely to have depressive symptoms, lower life satisfaction and worse overall mental health than those with a positive religious or spiritual attitude. [Med-E-Pop31]

11 tokens of the verbal process *added* were found in 9 Med-E-Pops (0.50 per 1,000 words). When writers use this verbal process they have previously decided to complement with more arguments what is being conveyed or has just been mentioned. One may think that the reason to enlarge the argumentative line could be just to enhance the previously given information or to justify it for its potential research weakness. In the Med-E-Pops corpus under study the floor is given to the lead researchers. Direct projections from informal interviews are supplemented

to the Med-E-Pops in the way of a final conclusion or recommendation or warning. Two examples have been depicted to exemplify this:

(155)**Dr. Hippisley-Cox**, who is a professor of epidemiology at Nottingham University, **added** that for those who find they are at high risk, weight loss and exercise are essential. “Those are the interventions that have been tested,” she said. “If you play around with the obesity measure, you can see how your risk will change if you lose weight.” [Med-E-Pop5]

(156)**Dr. Baigent added**: “Drug safety really matters when making recommendations for tens of millions of healthy people. We don’t have good evidence that, for healthy people, the benefits of long-term aspirin exceed the risks by an appropriate margin. If effectiveness is uncertain, then cost-effectiveness calculations are irrelevant.” [Med-E-Pop12]

10 tokens of the verbal process *concluded* were found in 10 Med-E-Pops (0.45 per 1,000 words). Needless to say from the point of view of the *sayer* the use of this verbal process denotes a direct reference to the real actors of the research process; the medical researchers. They were the agents in charge of opening and closing the piece of research and therefore drawing conclusions from the results obtained in their research process. However, as it has been commented in previous sections, this dissertation also observed the verbal acts or process related to *concluded*. The use of this verbal act implies a mental process carried out by the actor and agent of the Med-E-RAs research. Specifically, what can be found in my corpus is direct reference to what the Med-E-RAs researchers finally concluded and wrote in their original and counterpart Med-E-RAs. Two examples have been selected to illustrate this:

(157) In an accompanying Comment, Dr. Vladimir Mironov, Medical University of South Carolina, Charleston, SC, USA, and Professor Vladimir Kasyanov, Riga Stradins University, Riga, Latvia, discuss that the potential high cost of tissue-engineered grafts is a concern. **They conclude**: “Further optimisation and simplification of the original cell-sheet technology<sup>4</sup> and the use of rapid biofabrication processes could eventually lead to a clinically and commercially successful product. The successful clinical testing of the first commercial tissue-engineered vascular graft is a revolutionary milestone, manifesting the emergence of clinical vascular tissue engineering.” [Med-E-Pop8]

(158) “Based on findings of this large analysis using all available prospective data, condom use should continue to be recommended to both men and women for reducing the risk of HSV-2 acquisition,” **the authors concluded**. [Med-E-Pop25]



6 tokens of the verbal process *explained* were found in 5 Med-E-Pops (0.22 per 1,000 words). As in the previous cases, this process may aim to expand some kind of information due to different communicative purposes. Once again, the data resulting from the analysis of my Med-E-Pops corpus signals that writers report that researchers want to explain some piece of information related to the medical research process. Two examples exemplify this point:

(159)**Matlaga explained** that kidney stones are often caused by an excess of a dietary component known as oxalate, which normally binds with calcium and is flushed out of the body. Roux-en-Y surgery might reduce the amount of calcium that patients absorb, contributing to kidney stone formation. Consequently, Matlaga added, doctors may be able to help patients avoid kidney stones through calcium supplements or other interventions. [Med-E-Pop19]

(160)“We know that a few of the genes on the Y chromosome are important, such as the ones involved in the formation of sperm, but we also know that most of the genes were not important for survival because they were lost, which led to the very different numbers of genes we observe between the once-identical X and Y. Although there is evidence that the Y chromosome is still degrading, some of the surviving genes on the Y chromosome may be essential, which can be inferred because these genes have been maintained for so long.” **Wilson explained**. [Med-E-Pop30]

5 tokens of the verb *reported* were found in 5 Med-E-Pops (0.22 per 1,000 words). In the Med-E-Pops corpus the voices of the researchers are brought to the Med-E-Pops again because it is explicitly said that they, the researchers, were the ones who *reported* their findings as shown below:

(161)Reviewing the medical records of more than 8,000 people ages 2 to 85 the investigators tracked the effect of folate levels on respiratory and allergic symptoms and on levels of IgE antibodies, immune system markers that rise in response to an allergen. People with higher blood levels of folate had fewer IgE antibodies, fewer reported allergies, less wheezing and lower likelihood of asthma, **researchers reported**. [Med-E-Pop14]

(162) One of the most celebrated findings in modern psychiatry—that a single gene helps determine one’s risk of depression in response to a divorce, a lost job or another serious reversal—has not held up to scientific scrutiny, **researchers reported** Tuesday. [Med-E-Pop17]

5 tokens of the verb *suggested* were found in 5 Med-E-Pops (0.22 per 1,000 words). Writers have chosen to display with an indirect projection the verb *suggest* to

indicate the researchers' comments and warnings gathered in their counterpart Med-E-RAs as these two instances show:

(163) **The authors suggest** that this method could be used not only to predict the outcome of disease but also to discover new strategies for its treatment. [Med-E-Pop3]

(164) Interestingly, case fatality rates in Japan were significantly lower (11.8% lower) than in Europe, US, Australia, and New Zealand. No other regional differences in case fatality were found. **The authors suggest** that these regional differences may be the result of variation in the speed of patients' admission to hospital for the early occlusion of the aneurysm. [Med-E-Pop21]

The potential meaning of these verbal features related to the writers' interpretation can be summarised in the following table:

<i>Reporting verb</i>	<i>Writers' interpretation</i>
Say	There is no interpretation; the writer simply reports.
Write	The writer bridges from Med-E-RAs into Med-E-Pops. There is a refusal to mediate.
Note	The writer makes the audience stop and think on what researchers emphasise in their Med-E-RAs. The use of <i>note</i> , versus other verbs, remarks the importance of what is being quoted.
Find	There is no judging. Researchers' association related to their research findings are introduced.
Add	The writer expands the argumentative line to reinforce the research.
Conclude	The writer introduces researchers' mental process related to a research they conducted and their related statements.
Explain	Researchers are introduced because it is only they that are able to expand and clarify ideas.
Report	Researchers reported their own findings.
Suggest	Writers dare make suggestions or repeat the researchers' warnings.

Table 33. *Distribution of reporting verbs according to their frequency and potential meaning.*

The Med-E-Pop writer reports in a mild way what others, the Med-E-RAs researchers, have done. The writer's voice impersonates the potential voice of a narrator who neutrally reports what Med-E-RAs researchers have completed.

Writers then constantly point to who has done what, how and when. It may be said that Med-E-Pops writers willingly deprive their texts of their own voice by constantly bringing voices of Med-E-RAs researchers into the Med-E-Pops as the following figure illustrates:

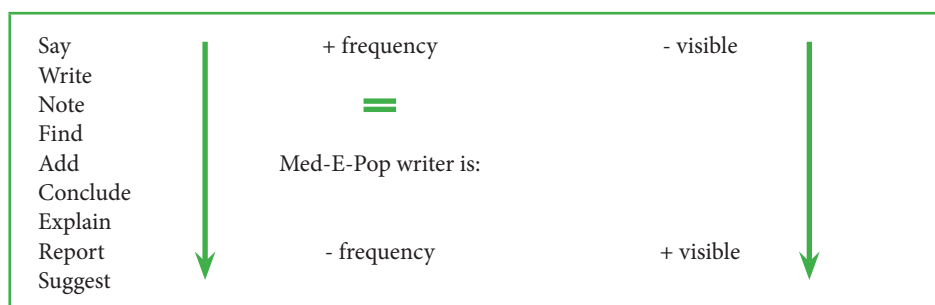


Figure 7. Distribution of reporting verbs according to their frequency and writers' visibility projection.

The figure illustrates that the more frequent a certain verb is in the Med-E-Pops corpus the less visible the writer becomes. The choice of verbs such as *suggest* or *conclude* may portray the writer as a more visible figure due to the intrinsic meaning of the verbs. These verbs may give the impression that a particular finding should be taken into account or should be accepted as valid. Therefore, the introduction of these statements may present the Med-E-Pops writers as more assertive and therefore visible figures. However, the scarce visibility of the Med-E-Pops writers to be inferred from the use of these reporting verbs indicates that Med-E-Pops writers assume the role of a reporter who attempts to be seen as an aseptic mediator.

After having observed that the reporting verbs chosen by Med-E-Pops writers do portray their timid presence and therefore their voice, this section aims to study what the role or attitude of Med-E-Pops writers towards the reported information is.

b) The analysis of the potential communicative implications of the use of certain verbs in reporting suggested that Med-E-Pops writers project a mild evaluation of what is being reported. Therefore, I then turned to Thompson and Ye (1991) in order to try to observe the potential degree of Med-E-Pops writers' commitment and detachment to, and therefore their attitude towards, the information reported and the degree of visibility ensuing from it. Although the first results pointed to an explicit neutrality and imperceptible intervention

of the Med-E-Pop writers, and consequently an almost negligible visibility, it seemed sensible to consider that these writers might still have a voice. A further analysis of my Med-E-Pops reporting was then carried out in order to unveil the writers' potential visibility traces regarding other factors referred to in this section. To uncover the attitude towards the information reported, based on the analysis shown above to study whether reporting verbs display any trace of Med-E-Pops writers' visibility, this section studies whether (i) Med-E-Pops denote or indicates who said or did what or (ii) whether Med-E-Pops evaluate the research and therefore portray a more audible voice.

(i) According to Thompson and Ye (1991) *denotation* could be interpreted from the use of three groups of verbal processes: textual, mental and research. Textual verbs refer to the process in which verbal expression is an obligatory component; for example *write, state, deny*, etc. Mental verbs refer primarily to mental processes; for example *believe, think, consider*, etc. Research verbs refer primarily to the mental or physical processes that are part of the research work; *measure, calculate, find*, etc. One instance of each verbal process has been selected from the corpus of Med-E-Pops to represent the three groups of verbs:

(165) "Our data suggest that severe disease and mortality in the current outbreak is concentrated in relatively healthy adolescents and adults between the ages of 10 and 60 years, a pattern reminiscent of the W-shaped curve previously seen only during the 1918 H1N1 Spanish pandemic," **the authors wrote**. [Med-E-Pop40]

(166) **Dr. Taylor believes** these study results may potentially open new research strategies, which may take into account the study of circulating endothelial cells and progenitor cells in paediatric patients. [Med-E-Pop28]

(167) **The researchers found** that the women with low bone density tended to experience a delay of more than a year between their first irregular menstrual period and receiving a diagnosis of primary ovarian insufficiency. [Med-E-Pop22]

Halliday (1988), Thompson and Ye (1991) or Martínez (2001) among others, have studied the implications of reporting in RAs, and agree on the fact that there is not a clear-cut, watertight categorisation of verbs. A mental or textual interpretation could be inferred depending on the use of the verb in context. However, all these verbs claim the existence of an author's text to a more or less explicit degree, and therefore the responsibility of the process is ascribed to the author of the source text, and in the case of this dissertation, to the researchers who authored the

Med-E-RAs. Thompson and Ye (1991) classify these verbs under the heading *author's acts*. They also distinguish between another group of verbs that do not refer to the author's acts but to the process for which responsibility is overtly ascribed to the reporting writer. These are known as *writer's acts*. Therefore, the goal of this research led me to focus on these *writer's acts*, their intentionality and therefore the visibility ensuing from them. One instance has been included here to exemplify this feature:

(168)Dr. Karen Loeb Lifford, director of family planning at Boston University School of Medicine, **said** she had already changed her clinic's practice to use the buccal route and include antibiotics.

"I do think the antibiotics will become the standard of care in the United States," Dr. Lifford **said**, adding that Planned Parenthood had an enormous database of patients who were very much like other women seeking abortions, so the results would probably apply to most patients. [Med-E-Pop23]

The following table shows the data interpretation according to Thompson and Ye's (1991) understanding of the *author's acts*: when the responsibility for the process is ascribed to the author. This analysis of the Med-E-Pops data also highlights the recurrent presence of the researchers, the authors of the Med-E-RAs, over the presence of the Med-E-Pops writers:

<i>Textual verbs</i>	<i>Mental verbs</i>	<i>Research verbs</i>
said wrote noted added explained reported stated pointed out proposed emphasised recommended suggested told	believed concluded acknowledged agreed cautioned advised assumed estimated	found
193 tokens (8.82)	24 tokens (1.1)	12 tokens (0.54)

Table 34. Classification (tokens) of the verbal acts that denotes the responsibility of the source text authors and their presence in the resulting Med-E-Pops.

These data reinforce the fact that Med-E-Pops boost the presence and visibility of the actors and agents of the research: the Med-E-RAs researchers. Med-E-Pops signal who-did-what with the use of these verbs.

(ii) As regards the potential evaluation of the use of reporting verbs, this dissertation applied two outstanding approaches to reporting. The first one is based on the reporting verbs and the meaning they add *per se* (Thompson and Ye: 1991). The second one is inspired by Hunston's (1993) approach to the writer's role as evaluator when reporting some chunks of information better than others.

Thompson and Ye (1991) consider that the evaluative potential of reporting verbs may be neutralised by the evaluative charge of other elements in the context. They consider that "grammatical factors such as negotiation and tense also play a varying role in modifying the evaluative potential" (1991: 372). Undoubtedly, there are always elements that may portray a text author's voice even if this voice could be considered trifling. Nevertheless, owing to the almost non-occurrence of these elements such as modal verbs or hedges in the Med-E-Pops corpus, this dissertation only focuses on the study of reporting and its evaluative potential concerning the Med-E-Pops writers' visibility. According to these authors, the potential evaluation of reporting verbs must be approached by considering three separate factors: the author's stance, the writer's stance and the writer's interpretation. The *author's stance* refers to the attitude that the author shows. These verbs can have positive (*note, accept, emphasise*), negative (*attack, challenge, dismiss*) or neutral connotations (*examine, evaluate, asses*). Two examples have been selected from the corpus to exemplify this classification:

(169) "Our findings show that, over a relatively short time, even inexperienced surgeons can perform RALS with efficiency and results comparable with open surgery," **said** lead author Hiep Nguyen, MD, Robotic Surgery and Research, Children's Hospital Boston, Boston, Massachusetts. "RALS is allowing us to perform suturing more quickly and safely, and we hope that ultimately this will allow for patients to recover faster and with reduced pain." [Med-E-Pop6]

(170) Sulkowski **notes** that comparative-effectiveness studies such as this one, despite their high cost and lengthy timelines, form the "fundamental backbone" for figuring out which one works best with newer treatments in the pipeline. Proposed next-stage therapies, primarily two hepatitis protease-inhibitors, boceprevir and teleprevir, are still in early testing, but can now be judged in comparison with what physicians know works best. Sulkowski says triple-combination drug therapies for hepatitis C could

prove the current therapies more effective when used as a cocktail, similar to the antiviral regimens used to combat HIV. [Med-E-Pop37]

In raw numbers and normalised per 1,000 words it can be observed that 168 tokens (7.69) can be considered to evaluate the *author's stance* as neutral or even cautious whereas the remaining 61 tokens (2.79) aim to reinforce the positive aspects of the research carried out:

<i>Positive author's stance</i>	<i>Negative author's stance</i>	<i>Neutral author's stance</i>
noted added explained reported stated pointed out proposed emphasised recommended believed suggested agreed acknowledged cautioned advised assumed		said wrote found concluded estimated told
61 tokens (2.79)	0 tokens	168 tokens (7.69)

Table 35. Classification of the verbal acts that evaluates how the author is reported and tokens.

The *writer's stance* is observed through the opinion of the writer towards the information conveyed. Three options may be observed here depending on the reporting verbs used. When the writer portrays the author as presenting correct information, evaluation can be labelled as *factive* (*acknowledge, demonstrate, identify*). If the writer perceives the author as presenting false information Thompson and Ye (1991) use the term *counter-factive* (*betray, confuse, disregard*). No instances of counter-factive verbs were found in my corpora. In Med-RAs this may be due, as Myers (1989) stated, to the general reluctance to disagree explicitly in public with a fellow researcher. In the case of Med-E-Pops, this may be due to the fact that Med-E-Pops writers, mainly as journalists, do not dare disagree or contradict Med-E-RAs researchers. Finally, the *non-factive* option would refer to the writer who gives no clear signal as to his/her attitude towards the author's information (*examine, generalise, claim*). See for example:

(171)Dr. Jensen **added**, “You should always balance a possible small increase in ovarian cancer risk with the physical and psychological benefits of pregnancy made possible only by use of these drugs.” [Med-E-Pop26]

(172)The researchers **pointed out** that none of the children were born to parents who smoked, removing that type of pollutant exposure from the equation. [Med-E-Pop32]

(173)That is, surgical masks appeared to be no worse, within a prespecified margin, than N95 respirators in preventing influenza. “Our findings apply to routine care in the healthcare setting,” they **concluded**. [Med-E-Pop38]

(174)Writing in The American Journal of Epidemiology, researchers **said** that the sand could also contain high levels of fecal bacteria, and that people who dig in it could develop gastrointestinal illnesses. [Med-E-Pop20]

The analysis of my corpus suggests that the stance of the Med-E-Pops writers towards either the researchers or the information reported is the same. There is a wider range of verbs that support that the information reported is *factive*. However, the frequency of *non-factive* verbs is noticeably higher. Table 36 summarises the prominence of verbal tokens that show no clear writers’ attitude towards the information presented in the Med-E-RAs:

<i>Factive verbs</i>	<i>Counter-factive verbs</i>	<i>Non-factive verbs</i>
believed concluded suggested acknowledged agreed cautioned advised assumed estimated recommend noted added explained stated pointed out proposed emphasised found		said wrote reported told
80 tokens (3.65)		149 tokens (6.8)

Table 36. Classification and total number of tokens normalised per 1,000 words of the verbal acts that evaluate the writers’ opinion towards the information conveyed in Med-E-RAs.



Therefore, the results found regarding the opinion of the Med-E-Pops writers towards the information presented show that Med-E-Pops writers prefer not to show clear signals of their attitude towards the information reported.

Another supporting angle in the evaluation would be the *writer's interpretation* angle. This concerns various aspects of the status of the proposition. Thompson and Ye (1991) identified four main options open to the writer: a) Author's discourse interpretation: the writer presents an interpretation of how the reported information fits into the author's text (*add, note, comment*); b) Author's behaviour interpretation: the writer presents an interpretation of the author's attitude or purpose in giving the reported information (*admit, warn, hypothesise*); c) Status interpretation: the writer indicates the functional status within his/her own framework of the reported information (*establish, account for, confirm*); d) Non-interpretation: the writer presents the report as objective (*say, write, observe*). These verbs may convey stronger positioning if we observe them in isolation. Nonetheless, we need to consider the cotext and context in which they occur to interpret the meaning that may place them under different taxonomy variables. According to Thompson and Ye (1991) my data could be classified as table 37 below suggests:

<i>Author's discourse interpretation</i>	<i>Author's behaviour interpretation</i>	<i>Status interpretation</i>	<i>Non-interpretation</i>
noted added suggest	explained agreed acknowledged believed emphasised cautioned advised cautioned recommend	found concluded stated pointed out estimated proposed	said wrote told report
31 tokens (1.4)	21 tokens (0.97)	27 tokens (1.23)	150 tokens (6.86)

Table 37. *Classification of verbs from the writers' interpretation angle and frequency in raw numbers and normalised per 1,000 words.*

The formal interpretation of these data would indicate, regarding frequency, that Med-E-Pops writers seem to present reports as objective since there are far more non-interpretation tokens (6.86 per 1,000 words) than tokens with interpretive

functions. However, since this dissertation aims to observe writers' visibility, which pivots on whether or not there is interpretation of the information status, the following section 3.5.3 will examine this issue from another angle.

I attempt to represent graphically how Med-E-Pops writers' visibility can be interpreted from these writers' use of reporting verbs with the following figure:

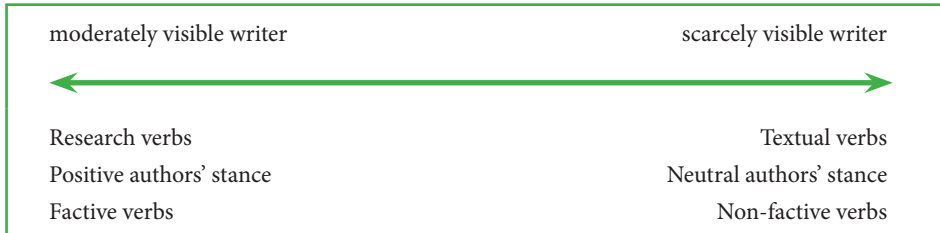


Figure 8. A graphic representation of the Med-E-Pops writers' visibility based on reporting data interpretation.

It can be observed that, as regards the potential *denotation* and *evaluation* capacity of reporting verbs, the Med-E-Pops data obtained from the analysis suggest that the majority of the textual verbs in the corpus that can be said to represent the *authors' acts* acknowledge the expertise of the researchers by reinforcing the reliable aspects of their Med-E-RAs research. Moreover, Med-E-Pops writers equally ascribe the responsibility of the research and its process to the authors of the source texts, that is, the Med-E-RAs, thereby freeing themselves from any responsibility and visibility. Beneath these lexico-grammatical features, a voluntary choice for invisibility would have been carried out. The *authors' stance* is represented by the high frequency of neutral tokens, which present the information as neither true nor false, followed in the number of tokens by the positive instances. The *writers' stance* towards the information reported is less factive than non-factive. In other words, the Med-E-Pops writers show more commitment towards neutrality than to an explicit and positive conceptualisation of the research process. In addition to this, we must consider the fact that no negative counter-factive verbs that reported the Med-E-RAs information as untrue were found. Finally, the tendency of the reporting tokens as regards *evaluation* towards the non-interpretation of the authors' discourse may directly account for the willingness of Med-E-Pops writers to present their texts as objective. This intended neutrality unquestionably tries to blur the Med-E-Pops writers' visibility in order to lead the readers' attention towards the Med-E-RAs researchers and their source texts. Nonetheless, the analysis on reporting ends with a study of the status of the information Med-E-Pops writers chose to report.

### 3.5.3 Voice at a reporting discursal level (the purpose of constructing Med-E-Pops by citing others' voices)

To study whether the status of information reported in a Med-E-Pop can be associated with the study of the concept of Med-E-Pops voice, this section reflects first on the potential visibility of the writers when supporting, or not, the Med-E-RAs research with their choices of reported information. This section will then deal with the potential role Med-E-Pops writers may adopt when reporting some chunks of information and the degree of visibility ensuing from that given role. To conclude, this section closes the study on reporting with the exploration of the citation sequence *according to* in Med-E-Pops.

i) Inspired by Hunston's (1993) *evaluation* approach to reporting, I realised that the question of whether the reporting constructions in Med-E-Pops are focused around judgements of the research by the Med-E-Pop writer required further consideration concerning the aspect of visibility. Therefore, the status of the information reported, as chunks of information, might be interpreted from the standpoint of the writers' visibility since Med-E-Pops writers might reinforce the research, mitigate possible weaknesses or criticise the Med-E-RAs research in some way by making themselves therefore visible in the Med-E-Pops. I then associated this practice with a potential visibility of the Med-E-Pops writers. A frequency distribution in the Med-E-Pops is included in Appendix 4. Only final results are presented in the following table 38:

Reported information from the Med-E-RAs reinforcing strong points from the research	184 (8.42)
Reported information from the Med-E-RAs mitigating potential weak points	45(2.06)
Total number of instances	229(10.48)

Table 38. Raw numbers and normalisation per 1,000 words of reported information attitude.

As mentioned above, no instances questioning any aspect of the Med-E-RAs were found. What is more, 80.3% of the reported chunks of information display the research as compelling and insightful as shown below:

(171) "Now that we have identified the magnitude of balance problems, primary care physicians are more likely to be on the look out for its early

signs and symptoms, and more attuned to when a patient needs to be referred to a physical therapist,” Agrawal says. [Med-E-Pop10]

(172)“If psychiatrists or family doctors diagnose anxiety in adult patients, it’s now clearly a good idea that they ask about the patients’ children and, if appropriate, refer them for evaluation,” says senior investigator Golda Ginsburg, Ph.D., a child psychologist at Hopkins Children’s and associate professor of psychiatry at the Johns Hopkins School of Medicine. “Right now, most doctors don’t think about this, let alone broach the subject. [Med-E-Pop11]

The remaining 19.7% of the reported projections found in the Med-E-Pops corpus mitigated the potential limitations of the research as researchers pointed out in their own Med-E-RAs—or seemed to convey in informal interviews. Two examples have been chosen to illustrate this:

<i>Med-E-RA1</i>	<i>Med-E-Pop1</i>
<p>(173) <i>Caveats</i>. While this is the largest study of its kind, there are a number of caveats. Our cases and controls were derived from another study hypothesis and were not matched to each other. Furthermore, 217 separate analyses were performed on the individual viruses, with 10.6% (23) yielding significant associations. Such multiple analyses increase the likelihood of identifying chance statistical associations (type 1 error) and because of small numbers in some of the subanalyses, associations cannot be confidently excluded (type 2 error). Limitations imposed by our ethics committee meant that we were unable to access case notes or other relevant clinical information about our cases and controls. Information such as Doppler studies on umbilical and uterine arteries, if available, would have enhanced this study.</p>	<p>The authors acknowledged that their cases and controls were not matched and that the small number of cases of pre-eclampsia in their sample (23) made it difficult to draw firm conclusions.</p> <p>Still, Dr. Alastair MacLennan, a co-author of the paper and head of the obstetrics department at the University of Adelaide, said the finding is interesting, although it needs confirmation with studies that include more cases. “As yet,” he said, “we don’t know its clinical significance.”</p>

<i>Med-E-RA5</i>	<i>Med-E-Pop5</i>
<p>(174) Limitations compared with an ideal study and Potential sources of misclassification, bias, and confounding. One limitation of our study is that the main outcome was type 2 diabetes diagnosed by a clinician and recorded on the clinical computer system. The outcome was not formally validated, and we have not used the results of laboratory tests confirm the diagnosis. However, this diagnosis would be unlikely to be recorded if the patient did not have diabetes—other studies of similar databases have shown good levels of accuracy for common chronic conditions, especially those that are now included in the UK quality and outcomes framework. Undiagnosed diabetes is a well recognised problem and is not specifically considered by our study. It is estimated to affect approximately 3% of the population according to the health survey for England.</p>	<p>Their study was published online March 17 in BMJ, and there is an interactive Web version of the algorithm at <a href="http://www.qdscore.org">www.qdscore.org</a>. Dr. Julia Hippisley-Cox, the lead author, said that two of its features—postal code and ethnicity—were specific to Great Britain, but that the algorithm will “give you a fairly accurate notion anyway,” even without specifying those two factors.</p>

From the Med-E-Pops counterparts—for instance the examples mentioned above—it is easily observed that the research content has been faithfully reproduced in the Med-E-Pop and that writers have neither manipulated nor altered the core information displayed in the Med-E-RAs by the medical researchers. See for more examples:

<i>Med-E-RA27</i>	<i>Med-E-Pop27</i>
<p>(175) The absolute risk increase was 0.12 per 1000 years. If this association is causal, use of hormones has resulted in roughly 140 extra cases of ovarian cancer in Denmark over the mean follow-up of 8 years, ie, 5% of the ovarian cancers in this study. Even though this share seems low, ovarian cancer remains highly fatal, so accordingly this risk warrants consideration when deciding whether to use HT.</p>	<p>The absolute risk indicated approximately 1 extra ovarian cancer for roughly 8,300 women taking hormone therapy each year. “If this association is causal, use of hormones has resulted in roughly 140 extra cases of ovarian cancer in Denmark over the mean follow-up of 8 years, i.e., 5% of the ovarian cancers in this study. Even though this share seems low, ovarian cancer remains highly fatal, so accordingly this risk warrants consideration when deciding whether to use HT,” the authors wrote.</p>

<i>Med-E-RA35</i>	<i>Med-E-Pop35</i>
(176) The association of insulin with breast cancer requires confirmation in other studies. Current recommendations for reducing breast cancer risk in postmenopausal women by maintaining a healthy weight and engaging in physical activity may have a beneficial impact on insulin levels as well as on estrogen levels.	Notably, the link between elevated insulin level and breast cancer was strongest among lean women and weakest among obese women (who, in general, have higher insulin levels compared with lean women). “This finding is potentially important because it indicates that, in postmenopausal women, insulin may be a risk factor for breast cancer that is independent of obesity,” says Dr. Kabat. However, because the number of lean women was small, this finding is preliminary. While these results require confirmation from other studies, Dr. Kabat notes that the current recommendations for reducing breast cancer risk in postmenopausal women—including maintaining a healthy weight and engaging in regular physical exercise—can help to reduce insulin levels.

A contrastive Med-E-RAs and Med-E-Pops analysis of the status of the information reported has not been included here because researchers use neither direct nor indirect projections in their Med-E-RAs. Med-E-RAs researchers cite, but do not report, previous studies to support their approach and to add contributions aligned with their Med-E-RA. They cite previous research, mainly in the Introduction or Background section, to convey that to their knowledge the type of study they conducted has not been carried out yet (as indicated in Chapter 2). These studies are cited with numbers, in agreement with Vancouver citations guidelines (see Chapter 1). This is the reason why these citations and projections are not included in the body on the Introduction or Background section of Med-E-RAs.

Data from the analysis suggest that with regard to reporting the citation sequence *according to* was the only comparable variable between Med-E-RAs and Med-E-Pops in range, frequency and interesting implications, as will be explained later in this section.

ii) I now turn to the formal analysis carried out in order to judge the writers’ attitude towards the reported information. I think that if a writer happens to show no attitude through the reporting verbs, the fact of quoting certain chunks of information rather than others would project at least some trace of stance or positioning. In agreement with the neutral interpretation of the role of reporting

in the corpus under study in the previous analysis, the following roles were proposed: neutral *narrator*—the writer simply reports—, *commentator*—the writer poses debate on the importance of the issue under study—and *evaluator*—the writer openly mitigates or reinforces the research. I analysed the Med-E-Pops corpus observing the direct projections first and then the indirect projections to check if there were any significant differences. Two examples from the Med-E-Pops have been included to illustrate this aspect:

	<i>Med-E-Pop4</i>	<i>Med-E-Pop22</i>
<b>Direct Reporter</b>		
Commentator	(177) “The number of people with dementia is increasing as our population ages, and we will face a growing public health problem of elderly drivers with memory loss,” study author Dr. XX noted in	(178) “Bone density is like a woman’s bank account of bone,” he said. “The more women build up and maintain their bone density when they’re young, the better off they will be when they’re older.”
Evaluator	“The goal is to prevent crashes while still maximizing patients’ rights and freedom to be mobile. By measuring driver performance through off-road tests of memory, visual and motor abilities, we may be able to develop a standardized assessment of a person’s fitness to drive,” he said.	“The new study helps explain why some women with the condition are more likely to develop low bone density. It also provides strong evidence that by diagnosing the condition early, replacing deficient oestrogen, and getting adequate calcium and vitamin D, these women can protect their bones from weakness and fractures.”
<b>Indirect Reporter</b>		The researchers found that women who had primary ovarian insufficiency had 2% to 3% lower bone density than did women without the condition.
Commentator	The drivers with Alzheimer’s committed an average of 42 safety mistakes, 27 percent more than the average of 33 safety errors made by those without Alzheimer’s. Drivers with Alzheimer’s who did better on the cognitive tests made fewer on-road safety mistakes, the team found.	Delays in diagnosis are common because the main symptom, irregular or stopped menstrual periods, is often disregarded by women and their doctors, the researchers said.

Evaluator		Dr. Nelson said that he was surprised by the finding that the African-American women in the study were more likely to have lower bone density than were white women. In general, African-American women are at lower risk for osteoporosis than are white women. He added that making sure to consume adequate calcium and vitamin D—either by modifying dietary habits or taking supplements—would probably reduce the bone thinning seen in this group of women.
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No instances of direct reporting with a neutral role were found as was expected—since those tokens could have been interpreted by the readership as too visible realisations of Med-E-Pops writers’ visibility. When writers used direct projections, they selected direct utterances from researchers that were capable of reinforcing the research or mitigating potential weaknesses from the research. This also supports the fact that the rest of the direct projections aimed to raise concern about the research issue by both fostering a debate about the research issue and highlighting the importance of the Med-E-RAs. This finding led me to reflect on the non-productivity of this angle due to the fact that the ultimate communicative aim of the Med-E-Pops was to praise their counterparts’ research. However, reflecting on the distinction of degrees of Med-E-Pops writers’ visibility from the point of view of these three roles was fruitless as is explained below. Likewise, the analysis of indirect projections led me to a dead-end because with these projections the writers were bringing the researchers voices into the Med-E-Pops. Therefore, writers simply reproduce the information gathered in the Med-E-RAs, as shown in previous examples, or comments from research authors who obviously wanted to raise the significance of their study, thereby gaining a research niche and possibly enhancing their research and their professional prestige.

It could be estimated that this approach actually supports the role of mere reporter ascribed previously to the Med-E-Pops writers. It also contributes to quash any doubts about the perception of a mild visibility of the Med-E-Pops writers. Besides, with this practice they also choose to hide themselves behind the other voices of the polyphony they attempt to establish in their texts.



iii) Another recurrent feature found in the Med-E-Pops corpus formal analysis was the use of the citation sequence *according to*. 27 tokens (1.23 per 1,000 words) were found in a total of 18 Med-E-Pops. 45% of the Med-E-Pops from the corpus under study used this sequence to justify the information displayed. According to John (2005) and her approach to writers' visibility, writers can step back from the reported information using different lexico-grammatical features. She states that when writers use direct or indirect projections their visibility is not affected because they can simply quote the information aseptically without leaving any trace of evaluation of either the information quoted or the researcher who stated that information. However, she thinks that writers' visibility is affected with the use of certain patterns. In her study of MA students' final theses, John observed that if writers used the sequence *according to* they wanted to distance themselves from the source text aiming to show no commitment with the information reported. On the other hand, when writers used the sequence *As XX said*, they wanted to be included in the idea cited. John shows that writers choose to be less or more visible in their texts by using some citation sequences rather than others. Therefore, she considers that writers can be either more visible in their texts (having an affected visibility) or more invisible (having a not affected visibility favouring the use of certain sequences). The following figure based on John's 2005 piece of research illustrates this point.

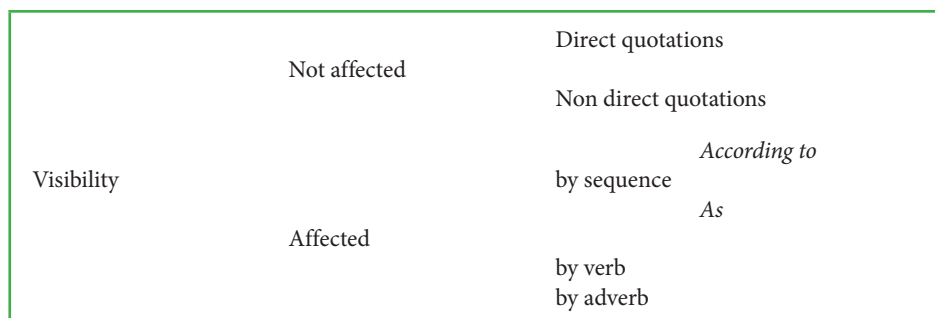


Figure 9. Adapted from John's (2005: 132) approach to writers' visibility through reporting.

The *according to* tokens found in Med-E-Pops corpus were followed by three possible patterns. (i) 18 tokens (0.82 per 1,000 words) were followed by the nouns *study*, *research article*, *report*, etc. These nouns were always related to the research carried out by the Med-E-RAs authors. See for example:

(179) Researchers have identified a new benchmark for starting drug treatment for AIDS, **according to a report** published online last week in the journal *Lancet*. [Med-E-Pop 7]

(180)CHICAGO—October 1, 2009—Surgical masks appear to be no worse than, and nearly as effective as N95 respirators in preventing influenza in healthcare workers, **according to a study** released early online today by JAMA. [Med-E-Pop 38]

(ii) A noun phrase referring to an institution or organisation followed 6 tokens (0.27 per 1,000 words). See for example:

(181)Keeping teens from smoking is critical to ensuring that adult smoking rates go down. Ninety percent of smokers start smoking by their 21st birthday, **according to the American Lung Association**. About 3,600 kids between 12 and 17 try their first cigarette each day in the United States, and about one-third of those will become regular smokers, the lung association reports.

Forty-three percent of teens were exposed to pro-tobacco imagery, **according to** the study. Tobacco products were specifically sold on 50 of the pages, and 242 pages contained links to tobacco products sold on other sites. [Med-E-Pop 33]

(182)Many fresh meat and poultry products are injected with water, sodium, potassium salts, antioxidants and flavorings that are not required to be listed on food labels, **according to** a report published online July 23 in the *Clinical Journal of the American Society of Nephrology*.

The critical regulation of the body's salt, potassium and acid content is performed by the kidneys, where waste products and excess fluid from the body are removed through the urine. The production of urine helps maintain a stable balance of body chemicals. **According to the National Kidney Foundation**, 26 million American adults have chronic kidney disease and millions of others are at increased risk.

Most foods that had phosphate and potassium additives reported them on the labels, but eight of the 25 “enhanced” products didn't, **according to the report**. [Med-E-Pop 34]

(iii) Finally, 3 tokens (0.13 per 1,000 words) were followed by noun phrases that represented the researchers. The examples included below exemplify this idea:

(183)May 20, 2009- A full third of American adults, 69 million men and women over age 40, are up to 12 times more likely to have a serious fall because they have some form of inner-ear dysfunction that throws them off balance and makes them dizzy, **according to Johns Hopkins experts**. [Med-E-Pop 10]

(184) July 9, 2009—(BRONX, NY)—Elevated insulin levels in the blood appear to raise the risk of breast cancer in postmenopausal women,

**according to researchers at Albert Einstein College of Medicine of Yeshiva University.** Their findings are published in the online version of the *International Journal of Cancer*. [Med-E-Pop 35]

One of the characteristics of working with an electronic corpus, as explained in Chapter 1, is that Med-E-Pops are not single or one-dimensional texts. There are many chunks within the text that are hyperlinked to other websites and therefore to further information on the issue, the study, etc. This is what takes place in every instance of citation sequences followed by a noun that represented the medical research in the Med-E-Pops corpus. These citations were hyperlinked, at least, to the Med-E-RA abstract—if the reader has open access to the medical journals he/she can get the original RA.

There are three tokens of citation sequences that make an explicit reference to *background information in the article*. Aligned with John's observations, these instances support the communicative intention of the Pops writer: to step back from the information quoted leading the readers' attention directly to the source text. One example has been selected to illustrate this point:

(185)Infection with the H1N1 virus has been reported in virtually every country in the world. The World Health Organization declared the first phase 6 global influenza pandemic of the century on June 11, 2009. The largest number of confirmed cases occurred in North America between March and July 2009, **according to background information in the article**. [Med-E-Pop 40]

When the citation sequence was followed by a reference to the researchers, an allusion to the seniority and expertise was also included as shown in the examples 183 and 184 included above. Whereas these allusions to the researchers' prestige may boost the readership's confidence, another function was also being fulfilled. These references to researchers and authors' affiliation were used to avoid the writers' responsibility and moreover, the Med-E-Pops intervention in the research process.

This sequence was also used in the Med-E-RAs corpus but, as explained above, researchers do not use it to cite other voices or previous works. Researchers do not use *according to* with previous studies or research, institutions or other researchers as Med-E-Pops do. They tend to use it in the methods and results sections to justify their research process as shown in the following examples:

(186)The ADIS-C/P was used to determine child diagnoses and was administered by trained evaluators. Parents were generally interviewed first, only composite diagnoses were used, and discrepancies between child and parent reports were reconciled on the basis of the clinical judgment of the independent evaluator (IE) conducting the interview and **according to ADIS-C/P guidelines**. [Med-E-RA11]

(187) **According to the sampling strategy** we used the unweighted case-cohort approach to estimate rate ratios for ovarian cancer in a Cox proportional hazard regression model, stratified according to the sampling strata (age and year of enrolment). We used age as the time scale to ensure that the estimates were based on comparisons of women of the same age. [Med-E-RA26]

It could be concluded that the use of these citation sequences in Med-E-Pops leads the readers' attention towards the source texts and their authors. This may be considered as a way of avoiding responsibility and commitment on the part of Med-E-Pops writers. I interpret these data as a practice of Med-E-Pops writers to establish distance from the Med-E-RAs. Writers create an objective scenario, by depriving their texts of any trace of Med-E-Pops writers' authorship. Med-E-Pops writers willingly choose to narrate the research process by bringing the real authors' voices and therefore visibility to the Med-E-Pops and leading the readers' reliance on the research itself not on the Med-E-Pops writers. Therefore, writers' visibility is negatively affected.

It could then be inferred from these results that Med-E-Pops writers seek to render themselves invisible in their texts in order to display their lack of mediation between Med-E-RAs and Med-E-Pops. In other words, this practice contributes to the conceptualisation of Med-E-Pops as reliable and not manipulated medical dissemination texts thanks to the apparent lack of linguistic and content mediation of Med-E-Pops writers.

### 3.5.4 Concluding remarks

The existence of voices other than those of the Med-E-RAs authors' in every Med-E-Pop led this piece of research to turn to previous works on polyphony. Nonetheless, it was difficult to set out a hierarchy of voices. Data interpretation suggests that the interplay established between the voices of Med-E-Pops writers and the other introduced voices aims at establishing reliability, as it is the Med-E-Pop writer who decides to bring some experts' voices into his or her text. The floor

is given to these experts' voices by signals that enhance their prestige and boost the credibility of what is being conveyed. Bringing voices from others, the Med-E-RA researchers or other scientists related to that area of medical investigation, enables Med-E-Pops writers to mitigate the potential weak points of the Med-E-RAs research and also to enhance the credibility of that piece of research by avoiding becoming involved with personal judgements and acquiring any kind of commitment or responsibility for that research. These disguised writer's acts bring other voices into the Med-E-Pops. These voices are always introduced by an explicit reference to their status and professional affiliation and are mainly used to reinforce the Med-E-RAs new findings.

Data also led this analysis to observe verbs from different points of view such as the meaning of the semantic implications of the verb acts used as reporting verbs. Observation of the potential attitude of the writer suggests that Med-E-Pops writers only aim to report in a mild way what others, the Med-E-RAs researchers, have done. The writer's voice impersonates the potential voice of a narrator who neutrally reports what Med-E-RAs researchers have completed. Writers then blur their own visibility by bringing the researchers' visibility to the fore by constantly indicating who has done what, how and when. It may be said that Med-E-Pops writers willingly deprive their texts of their own voice by bringing Med-E-RAs researchers' voices into the Med-E-Pops. The less recurrent verbs, such as *suggest* or *conclude* portray the writer as a more visible figure due to the intrinsic meaning and semantic implications of the verbs. However, their frequency is negligible.

Therefore, the analysis of the potential communicative implication of the use of certain verbs in reporting led me to conclude that Med-E-Pops writers project a mild evaluation of what is being reported. However, this mild evaluation reveals that despite the intervention of Med-E-Pops writers in the preparation of Med-E-Pops, these writers remain invisible although there is still a weak voice. Lack of visibility of Med-E-Pops writers, in agreement with Thompson and Ye (1991), denotes the existence of a research author and not the existence of a Med-E-Pop writer. Therefore, the responsibility of the process is ascribed to the author of the source text, the researchers who manage to have their articles published. In agreement with Thompson and Ye, verbs were approached from the angle of denotation and the angle of evaluation. The verbs studied under the denotation angle provided the basis for the distinction between *author's acts* and *writer's acts*. In the latter, the responsibility for reporting lies with the writer. He or she decides to bring a set of voices to the text. In the Med-E-Pops corpus, the high frequency

of textual verbs mainly portrays the visibility of the Med-E-RAs authors who developed the research process. As regards evaluation, the writer's interpretation, the author's stance and the writer's stance have been analysed according to the reporting tokens found in the Med-E-Pops. According to the results obtained, the author's stance is more neutral than positive. As regards the writer's stance, more tokens of non-factive verbs than factive verbs were found. This fact indicates that Med-E-Pops writers give no clear signal of their attitude towards the information reported from Med-E-RAs. As concerns the concept of the writer's voice these results must be interpreted as a firm intention of invisibility. Either due to lack of commitment with the research or to the intention to appear as neutral as possible for the reader, Med-E-Pops writers avoid projecting their voices in their texts, contrary to my expectations. In addition, inspired by Hunston's (1993) approach to evaluation, I also tried to associate the chunks of information reported with a specific writer role as a commentator or evaluator. Nonetheless, no significant conclusions could be drawn from that analysis since once more the role of the Med-E-Pops writer was confirmed solely as a narrator. Even the citation sequences used in this Med-E-Pops corpus lead the readers' attention towards the source text and their authors.

Findings related to reporting have been approached from different angles to show the relative degree of the Med-E-Pops writers' visibility. The discussion of all these angles point to the same conclusion: Med-E-Pops writers have some amount of voice even though they choose to have a largely invisible presence in their texts yet it is a conscious invisibility or decision. They show no evaluation of what is being reported in their Med-E-Pops. Also, the use of the reporting features they make both diminish their visibility in a blurred scenario and lead the readers' attention towards the real actors of the research process, the Med-E-RAs authors. This is a strategy to make the readers trust in the scientific rigour of the Med-E-Pops due to the fact that Med-E-Pops writers participate in the process of medical knowledge dissemination as mere reporters and neutral narrators of the research story. In general, the results obtained both in this section and in the previous ones indicate that all the generic and lexicogrammatical strategies explored in this dissertation lead me to conclude that the invisibility of the Med-E-Pops writers was brought about by various devices with the ultimate aim of disseminating reliable medical information among Internet readers worldwide.



## CHAPTER 4

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### FINAL CONCLUSIONS

#### Summary of findings

Although we are living in an era of ICTs, today's communication society shows no interest in accessing field-specific academic journals (e.g. mathematics, engineering, physics, law, sociology, business studies etc.) except for those journals ascribed to the discipline of medicine. There is a social need for the latest findings (i.e. the newest treatments, medicines etc.) which are presented in a complicated language according to fixed generic conventions in order to be accepted in their field-specific academic journals. This *academic-coding* of medical knowledge stops lay people from understanding this medical information. Therefore, our global society demands Med-RAs adaptations. The *need-for-adaptation* has meant the growth of a new electronic genre: Med-E-Pops. This genre is mainly addressed to lay people (with no advanced medical knowledge) in order to facilitate the understanding of medical information on the Internet.

In addition to that, each week thousands of Med-RAs are published and most of them may contribute new knowledge and views that could modify clinical daily practice. Therefore, it is also essential for medical personnel to keep constantly up-to-date not only in their own field-specific background but also in related areas (e.g. urology and gynaecology). This massive amount of newly published medical information is also being filtered by the Med-E-Pops genre allowing medical personnel to have quick access to the most relevant Med-RAs findings published every day. It is Med-E-Pops editors and Med-E-Pops writers who pre-select the Med-RAs to report on—Med-RAs which stand out due to their scientific impact—, thereby enabling these medical personnel to keep up-to-date as far as new medical knowledge and clinical daily practice are concerned.

This newly created Med-E-Pops genre, together with its generic and lexicogrammatical conventions, which are always based on those used in Med-RAs



(in order to maintain scientific rigour and the trust of readers), is the source of inspiration and motivation for this study of writers' self-representation.

The aim of this research was to study the concept of writer's voice, and the way it is connected to writer's visibility, in medical popularizations written in English and published on the Internet. These Med-E-Pops are published in e-journals, and so these publications are open to an international Internet readership. This given context of publication may cause some uncertainty regarding the scientific rigour, formality and reliability of these Med-E-Pops. Therefore, this analysis is motivated by the need to reveal whether the role of Med-E-Pops writers may be relevant to the characterisation and conceptualisation of what I have identified as the Med-E-Pops genre. It has generally been believed that popular medical texts published on the Internet may end up misinforming a lay audience, who surf the Internet with the desire to understand medical information but may come across sources of information addressed to a specific discourse community with potential manipulative purposes. This analysis is, therefore, conceived as a contribution to the study and definition of a new trustworthy electronic medical genre resulting from different genre relations and the advent of ICTs in recent years. Further, it was felt that by analysing the lexico-grammatical realisations of the writer's voice in Med-E-Pops, and their corresponding degree of visibility in the texts, I would be able to provide evidence about the implications of the voice of Med-E-Pops writers and the subsequent visibility of writers for the conceptualisation of the Med-E-Pops genre as a trustworthy genre for the dissemination of medical knowledge outside academia. Med-E-Pops writers make themselves present in the text just by using linguistic resources that hardly represent themselves, their position or their readers. Based on the data analysis it is inferred that it is the voice, and not the stance that is the concept required in order to interpret the presence or mediation of Med-E-Pops writers, since these writers project their voices while portraying no stance traces at all.

The above conclusion would not have been possible if my dissertation, which was initially designed for the exploration of the concept of the voice of Med-E-Pops writers, had not passed from the study of genre to the concept of voice and then, redirected by my findings, to the conceptualisation of the Med-E-Pops genre, as explained below.

Finally, this research aimed to raise awareness about the concept of writer's voice and its pedagogical implications since all writers should anticipate the impact of their (in)visibility on the potential readership and the ensuing effect

of that (in)visibility on the communicative purpose of the text these writers may be creating.

With these aims in mind, this dissertation mainly draws on genre studies and genre relations, then on the nature of the medical popularizations genre and lastly on the concept of writer's identity and the ensuing relation between the writer's voice and writer's visibility. Generic and lexico-grammatical features have been quantitatively and qualitatively analysed in two comparable corpora of Med-E-RAs and Med-E-Pops. The frequency analysis was based on those realisations or types extracted from the corpus following a corpus-driven methodology. That is, although previous analyses on impersonality and genre studies analysis in RAs have been taken into consideration, the taxonomies for the exploration of the Med-E-Pops genre and for the exploration of the voice of Med-E-Pops writers were based on a careful reading, a manual scan and qualitative analysis of the texts comprising the corpus. As a result, some adjustments of previous depersonalisation taxonomies have been deemed necessary so that the resulting taxonomy would better suit the analysis carried out here, where the concept of voice is adopted to interpret results about Med-E-pops writers.

In addition, medical informants' feedback on the state of the art of medical popularizations published on the Internet proved to be very valuable for the validation of this study on Med-E-Pops as medical knowledge dissemination vehicles, its consolidation as a genre, and the interpretation of some of the findings.

The two sets of results (on genre and writer's voice) obtained from the corpus study are first examined in the Med-E-RAs corpus in order to explore whether and how the Med-E-Pops mirror their counterparts. By so doing, the ultimate aim is to reflect on the lexico-grammatical and generic realisations of the mediation of Med-E-Pops writers and, therefore, on the visibility of these writers. The interpretation of the results on the mediation of Med-E-Pops writers, and therefore visibility, shed light onto the conceptualisation of Med-E-Pops genre as a trustworthy medical knowledge dissemination vehicle for lay readers and medical personnel.

The medical electronic popularizations under study are framed by the ESP tradition and they are the result of a genre in constant evolution due to its adaptation to the information demands of 21<sup>st</sup> century society (Campagna *et al.* 2012). Therefore, Med-E-Pops genre should be considered as a dynamic genre that evolves within the socio-rhetorical activity of the community of lay

Internet readers and medical personnel. These findings suggest that the rapid rise of Internet users has shaped the evolution of the Med-E-Pops genre itself and this fact justifies the electronic text layout, content and information structure. Moreover, the fact that the potential Internet readership engages with electronic texts for short periods of time has also influenced the evolution of these medical popularizations published on the Internet. To my understanding, this social and technological setting has led different e-journals and health care institutions, like the ones explored in this research, to share exactly the same textual and lexicogrammatical conventions in their Med-E-Pops.

The findings obtained from the contrastive analysis of Med-E-RAs and Med-E-Pops genres suggest that the combination of form and discourse found in Med-E-Pops is the result of genre evolution. Needless to say, Med-RAs and Med-E-Pops are different genres since both genres present and solve medical matters in a totally different way regarding their target audiences. Although, as Myers (1986) states, Med-RAs dissemination versions are incompatible in academia as vehicles of medical knowledge dissemination, it cannot be denied that Med-E-Pops are embedded in the colony of medical genres. Med-E-Pops imitate their counterparts, Med-E-RAs, to build trust around them. Therefore, this *crossbred* Med-E-Pops genre rearranges Med-E-RAs form and function to meet the expectations of Internet readers and also gain the acceptance of these readers. In addition, contrary to some criticism about the informality of popular texts, Med-E-Pops give evidence on their home pages by means of their linguistic and textual choices that these popularised electronic texts provide information about the latest medical breakthroughs with the utmost scientific rigour. Therefore, Med-E-Pops should be conceptualised as a new combination of form and purpose embedded in the medical colony that reorganises linguistic, textual and scientific Med-RAs content for the sake of the understanding of the Internet community.

This research started from the premise that Med-E-Pops are professional medical reports written by specialised journalist or medical personnel and published in electronic specialised journals or online newspaper health sections. Med-E-Pops can be considered as the electronic evolution of popular medical texts such as Nwogu's (1991) JRVs but with one extra constraint: the Internet as the publication medium. Med-E-Pops are shorter than JRVs and, as argued throughout this PhD thesis, contrary to some studies such as Gil-Salom (2000), Giunchi (2002) or Gallardo (2005), have a hierarchical and canonical internal information order and moves structure. This dissertation has explained that Med-E-Pops show a hierarchical order for the organisation of moves in the text.

My findings suggest that the moves found in Med-E-Pops are: *introduction, contextualisation of the research process, further results and conclusion.*

Needless to say, the uniformity of the Med-E-Pops move structure is necessary in order to ensure the successful production and reception of a certain type of scientific information that because of various interests becomes journalistic information, which is a need that involves both writers and readers.

Med-E-Pops focus on the object of study whereas their counterparts Med-E-RAs are concerned with the research process. This does not mean that Med-E-Pops display poorer scientific rigour. Med-E-Pops writers mediate between Med-E-RAs and their electronic popularizations in order to create texts that are short and easy to understand. One of the advantages of being *electronic* medical popularizations is that readers can map information and meaning while understanding what the research is about. Med-E-Pops writers facilitate readers' understanding by means of form and content adaptations. Med-E-Pops writers' adapt the text structure, the medical content and the medical discourse so that certain readers can quickly read that information and, if readers wish, they can read further thanks to the hyperlinks and the enormous search possibilities the Internet offers.

Med-E-Pops attempt to achieve clarity and objectivity, as they are designed to address a wide range of professionals from doctors to educated and non-educated readers around the world in a quick and reliable way. This heterogeneous readership with a potential wide variety of cultural, professional and personal backgrounds has inspired e-journals and institutions to come to a sort of generic agreement. In other words, the medium and the discourse community (writers and readers) have defined and therefore accepted a certain generic evolution of the medical dissemination article or medical popularization as valid. Therefore, Med-E-Pops have to follow a journalistic format (Funkhouse *et al.* 1970) while being easy to read and access, since they are available on the Internet.

As stated throughout this dissertation, this newly created member of the medical genre colony has a canonical information structure which is the result of the mirroring of its Med-E-RAs counterparts. The narrative of these information structures is constrained by the publication medium and the expectations of mass media readers. Therefore, the purpose of each move is to clearly show who did what, why, when and how. For that purpose, the understanding of these generic features and the realisation of the writer's voice (these writers being responsible for the translation or adaptation of medical content) is what builds trust not

only about the medical research but also about the Med-E-Pops. Therefore, this dissertation claims that the new Med-RAs adaptations of form and content, identified in this PhD thesis as Med-E-Pops, are not a threat against the canonical order or scientific content of Med-RAs.

To observe how the writer's voice contributes to the positive conceptualisation of Med-E-Pops, this study analysed the lexico-grammatical realisations of the voices of Med-E-Pops writers. It has been concluded from previous studies on impersonality in Med-RAs that rhetorical features are used in Med-RAs because the discourse community expects them to appear. For instance, some linguistic strategies are there to create an effect on the readership: the use of agentless passive constructions in the Methods RAs move attempts to show that the human factor barely interferes in the research process. The use of impersonality therefore displays the research process with neutrality and objectivity. Depriving the research of human factors builds trust about the research reported on in the RAs. Therefore, based on previous approaches to impersonality in RAs I designed a taxonomy to study the various degrees of the visibility of Med-E-Pops writers.

Focusing the discussion of findings on the visibility of Med-E-Pops writers was not only enlightening in order to fulfil the main research aim of this dissertation (the study of the voice of Med-E-Pops writers) but also for the conceptualisation of the status of the Med-E-Pops genre since it is important to find out whether excessive Med-E-Pops writer mediation can create distrust about the Med-E-Pops genre.

The starting point for the contrastive analysis of the visibility of Med-E-RAs researchers and Med-E-Pops writers was the use of *animate agent + active verb* in Med-E-RAs since I initially hypothesised that this construction must be very common in Med-E-RAs and almost absent in Med-E-Pops. In other words, I aimed to find out whether Med-E-RAs researchers project their authorship through the use of *animate agent + active verb* and therefore Med-E-Pops writers use other lexico-grammatical features to refer to the role of Med-E-RAs researchers' agency since Med-E-Pops writers are not the authors of the research. Therefore, the use of *animate agent + active verb* in the Med-E-Pops corpus should have showed the less visible trace of Med-E-Pops visibility since the agents of the research are the Med-E-RAs researchers and they are the ones who deserve to be visible in the Med-E-Pops. As a result, the construction *animate agent + active verb* found in Med-E-Pops could not be associated with the visibility of Med-E-Pops writers: the animate agents found in Med-E-Pops were noun groups that refer to the

Med-E-RAs researchers, and thereby confirmed the visibility of the Med-E-RAs researchers in the Med-E-Pops.

Therefore, I turned to the study of the syntactic subjects of the research processes in Med-E-RAs, a function fulfilled by lexico-grammatical units (first person plural pronoun, object pronoun and possessive determiner), adopting the metadiscursive framework. In other words, I studied *self-mentions* in Med-E-RAs, because when researchers openly intend to project their voice into their texts they use these features, which refer to the degree of explicit author presence in the text. As with previous studies, I observed that Med-RAs researchers are interested in claiming their authorship and prestige mainly through the use of the personal pronoun *we* and the possessive determiner *our*. In the Med-E-Pops, however, there were no self-mentions promoting either the visibility of Med-E-RAs researchers or Med-E-Pops writers. Instead of self-mentions, the lexico-grammatical features that represent the most noticeable degree of visibility are the constructions of noun phrases which refer to the Med-E-RAs researchers, followed by active verbs. These constructions constitute a direct semantic association with the Med-E-RAs researchers and with what they did in their research and in their Med-E-RAs. Regarding the contrastive analysis of self-mentions in Med-E-RAs and noun phrases that refer to the researchers followed by active verbs in Med-E-Pops, it should be noted that the frequency in Med-RAs is almost double the frequency in Med-E-Pops (6.39 per 1,000 words and 3.52 per 1,000 words respectively). This may be due to the fact that Med-E-Pops writers favour the use of different lexico-grammatical features to seek a balance between scientific rigour and linguistic adaptation in their Med-E-Pops when creating the visibility of Med-E-RAs researchers, as this PhD thesis intends to show. The results found in Med-E-Pops comprise the noun phrases that refer to the Med-E-RAs researchers which originally were self-mentions in Med-E-RAs (almost 52%) and the noun phrases that refer to the Med-E-RAs researchers which in Med-E-RAs were not self-mentions but impersonal constructions (almost 48%). Therefore, it can be concluded that Med-E-Pops writers have the same interest in preserving the visibility of Med-E-RAs researchers (already expressed in Med-E-RAs by the researchers through the use of self-mentions) as in ratifying the researchers' visibility in Med-E-Pops—even though these researchers had decided to use impersonal lexico-grammatical structures in their own Med-E-RAs. This syntactic simplification of the impersonal constructions in Med-E-RAs that are transformed into noun phrases that represent the researchers in Med-E-Pops (these phrases being common nouns that refer to the Med-E-RAs researchers

or Med-E-RAs researchers' proper names), facilitates the understanding of the medical content and research narrative. Moreover, the change from impersonal to personal constructions also helps in the understanding of whose agency, and therefore visibility, should be perceived. Med-E-Pops writers set out to clarify the idea that the real agents of the research story narrated in the Med-E-Pop are the Med-E-RAs researchers. Therefore, it can be interpreted from this study that Med-E-Pops writers blur their presence by using these lexico-grammatical features in order to contribute to their invisibility while promoting the visibility of Med-E-RAs researchers.

The distinction between general nouns that refer to the researchers and those that quote the proper name of Med-E-RAs researchers showed no remarkable differences. Needless to say, both constructions (noun phrases being common nouns or Med-E-RAs researchers' proper names followed by active verbs) increase the visibility of the Med-E-RAs researchers and not the visibility of the Med-E-Pops writers. We must consider that naming the Med-E-RAs researchers by their proper names (and not with a general noun such as *the researcher*) improves the visibility of the Med-E-RAs researchers by establishing a more direct association with the real agents of the research process.

To my understanding, the absence of the visibility of Med-E-Pops writers is not due to a lack of commitment to the Med-E-RAs research by the Med-E-Pops writers, since they highlight the visibility of the Med-E-RAs research. Med-E-Pops writers enhance the objectivity and reliability of Med-E-Pops as vehicles of medical knowledge dissemination outside academia, by highlighting the visibility of the agents of the research Med-E-Pops report on. Therefore, separating their Med-E-Pops from their own opinion, bringing the visibility of medical research agents and their findings into the Med-E-Pops, helps the constructions of less manipulative texts and builds trust about the Med-E-Pops.

In addition, it can be observed that all these noun phrases that refer to the Med-E-RAs researchers are intended to confirm the researchers' visibility since they introduce material and mental patterns of experience. These noun phrases are followed by patterns of experience that describe material and mental processes only carried out by the Med-E-RAs researchers. This practice enables a direct semantic association between the construction in the Med-E-Pop text and the *who-did-what* in the research process. The balance maintained by Med-E-Pops writers between the use of material processes and the use of mental processes in the Med-E-Pops corpus confirms that the agents and *thinkers* of the research

are the Med-E-RAs researchers. Therefore, the ones who deserve to be visible in the Med-E-Pops are the Med-RAs researchers due to the principle of intellectual property and for the sake of the Med-E-Pops trustworthiness.

These findings help us to conclude that by using noun phrases that refer to the Med-E-RAs researchers followed by material and mental patterns of experience (or verbal acts), Med-E-Pops writers endorse the idea that the real agents of the research story narrated in the Med-E-Pops are the Med-E-RAs researchers and not themselves, whose function is that of mediators. This study has therefore shown that the use of *animate agent + active verb* in Med-E-Pops is the lexico-grammatical feature under study that can most clearly be associated with the invisibility of Med-E-Pops writers.

Regarding passive constructions, this dissertation hypothesised that the occurrence of these constructions in Med-E-RAs might be very high since, in order to be published in the most prestigious scientific journals in their medical fields, Med-E-RAs must have complied with the rhetorical and generic conventions of the RAs genre. The high degree of impersonality these passive constructions convey is one of the characteristic features of the RAs genre. The virtual detachment or distance established by researchers regarding the implications or responsibilities ensuing from the research is one of the potential reasons for the use of the passive in Med-RAs. As a matter of fact, the use of these passive constructions deprives both the research and the Med-RAs of human involvement. Therefore, the research process is presented as an objective process, which has not been manipulated by the researchers in order to reach predetermined conclusions. This objectivity or neutrality of the research process is transferred from the research process to the Med-RA in order to create a reliable vehicle for medical knowledge dissemination. This hypothesis on the use of passive constructions in Med-RAs is confirmed by the results obtained from the Med-RAs analysis.

As regards the association of the use of passive constructions and the concept of the visibility of Med-E-Pops writers, it was also hypothesised that passive constructions should be the second linguistic variable to be studied following the visibility cline proposed in this study as described in section 1.4 (see figure 2). Passive constructions were associated with the apparent absence of agency in Med-E-Pops and therefore with the concept of the visibility of Med-E-Pops writers. In the methodological design these constructions were presupposed to seek the Med-E-Pops objectivity by mirroring the Med-E-RAs use of agentless



passive constructions in order to create reliable texts and to silence the voices of Med-E-Pops writers through the use of agentless passive constructions whose agents (the Med-E-RAs researchers) are easy to infer.

The results indicate that Med-E-Pops writers choose to have a voice-less presence in their own texts by confirming the visibility of the Med-E-RAs writers not only through agentless passive constructions whose agents are semantically associated with the Med-E-RAs researchers, but also by including certain patterns of experience in these agentless constructions—since these research experiences can only be carried out by the researchers and not by the Med-E-Pops writers, as is explained below.

A distinction was made in the corpora between passive constructions with agents and agentless passive constructions. Needless to say the agents of the agentless passive constructions found in Med-E-RAs were implicit and all of them referred to the Med-E-RAs researchers. There were also passive constructions with explicit agents in Med-E-RAs. However, contrary to what I had expected, the *by-phrases* found in Med-E-RAs sub-corpus neither give researchers visibility nor refer to the Med-E-RAs authorship. In the Med-E-Pops we can find the same constructions.

The implicit agents of the agentless constructions in Med-E-Pops were easily associated with the Med-E-RAs researchers—since 62% of these constructions were semantically related to the Med-E-RAs researchers as agents of the research process. As regards the passive constructions with an agent, it is worth considering that their *by-phrases* do not refer to the visibility of Med-E-RAs or Med-E-Pops writers. *By-phrases* in Med-E-Pops mainly refer to the Med-E-RAs funding as is explained below in this chapter. Therefore, neither Med-E-RAs researchers nor Med-E-Pops writers give researchers or writers visibility with these *by-phrases*.

Further results from the contrastive analysis—Med-E-RAs and Med-E-Pops—show that there is a remarkable quantitative difference between the use of passive constructions in Med-E-RAs and Med-E-Pops (15.99 per 1,000 words and 5.58 per 1,000 words respectively). Therefore, the obvious question that needs to be asked is related to this significant difference in the use of the passive constructions in both sub-corpora: if we consider that Med-E-Pops should mirror the generic and linguistic conventions of Med-E-RAs in order to build trust about the Med-E-Pops, the quantitative difference between the corpora seems surprising. Nevertheless, if we compare the use of passive constructions in Med-E-Pops with the rest of the variables associated in this study with the concept of

the visibility of Med-E-Pops writers, it should be noted that there is a balance in terms of the use of lexico-grammatical features to convey writers' visibility, that is, Med-E-Pop writers do not favour the use of certain lexico-grammatical constructions over others except in the case of reporting sequences.<sup>93</sup>

As regards syntactic transformations it should also be noted that, in the process of turning Med-E-RAs into Med-E-Pops, Med-E-Pops writers prefer the use of active constructions, which favour both the creation of the visibility of Med-E-RAs researchers and the semantic understanding of the medical content. By so doing, Med-E-Pops writers clarify who-did-what, and hence, give visibility to the real agents of the Med-E-RAs research. Since this study hypothesised that the presence or absence of agency in passive constructions could be associated with the concept of the visibility of Med-E-Pops writers, passive constructions with and without an agent were studied in-depth.

As mentioned above, the evidence found in this study suggests that the most remarkable finding regarding passive constructions with an agent in Med-E-Pops is the reference to the research funding—made in the Med-E-Pops corpus by *by-phrases*, which is a reference that is also becoming more and more frequent not only in Med-E-RAs but also in their abstracts. I believe that Med-E-Pops writers promote the visibility of the Med-E-RAs researchers by means of this device on the basis that their research was work that deserved substantial financial support. It is then suggested in the Med-E-Pops that the medical research carried out and later displayed in the Med-RAs is awarded with that funding for its scientific value. The inclusion of the reference to the funding source therefore draws the attention of Med-E-Pops readers not only to the importance of the Med-RAs research and the researchers' visibility but also to the professionalism and trustworthiness of the Med-E-Pops that report on these outstanding Med-E-RAs. The lay audience may then reflect on the fact that Med-E-Pops writers are reporting on the latest and most advanced pieces of medical research available worldwide and therefore this fact builds trust about the importance and reliability of the Med-E-Pops genre.

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93 From a quantitative approach, reporting is the most frequent feature. However, from a qualitative approach it could be said that reporting may be used to project Med-E-Pops writers' mediation and visibility both through the information they choose to report and the evaluation these writers may introduce when citing the reported information. Contrary to these expectations, as mentioned in section 3.5 and summarised below in this chapter, Med-E-Pops writers choose to keep their voices negligible.

As mentioned in the introduction to this research, this study could have been approached from a CDA perspective. That angle would open a debate on whether Med-E-Pops writers show a subservient attitude towards the medical knowledge dissemination media business, since referring to the Med-E-RAs funding in Med-E-Pops could be conceptualised as an instance of institutional propaganda. However, as also mentioned in the introduction to this dissertation, this avenue of research does not fall within the scope of this study on writers' visibility although it could be an interesting path for future research.

Taken together, the results obtained about passive constructions with agents in Med-E-Pops suggest that the invisibility of Med-E-Pops writers operates at different levels. Therefore, it can be stated that in Med-E-Pops there is an invisible writers' voice in the lexico-grammar, on the surface, but a less invisible voice when it comes to assessing the rhetorical choices made by these Med-E-Pops writers (since it must be remembered that a voice in written texts cannot be avoided). That is, the crucial aspect regarding the issue of the visibility of Med-E-Pops writers is that Med-E-Pops writers are the ones who choose what to report from Med-E-RAs and how to report it.

The two types of agentless passive constructions found in Med-E-Pops, which are remarkable for their high frequency of use, are those whose implicit agents invoke the Med-E-RAs publications prestige and, above all, those agentless passive constructions whose implicit agents refer to the Med-E-RAs researchers.

Regarding the first type, what I infer from the analysis of these agentless passive constructions is that in the Med-E-Pops genre making reference to the source of the Med-E-RAs publication can be interpreted from two standpoints. One interpretation might be that Med-E-Pops refer to the Med-E-RAs sources of publication by means of agentless constructions because Med-E-Pops writers aim to highlight the prestige of the RAs journals as well as the technical value of the Med-RAs that have deserved to be published in such scientific journals. The other possible interpretation could be that by means of invoking the prestige of the Med-RAs journals in Med-E-Pops, these Med-E-Pops writers are conveying a certain degree of the visibility of Med-E-RAs researchers since Med-E-RAs researchers are the ones who got their work published in these prestigious publications, and therefore they are the ones who should be visible. In general, I think that the textual evidence found in the analysis shows that it is the Med-E-RAs journals that deserve such attention, and therefore deserve the prestige and recognition of the potential Med-E-Pops readership.

As regards the second type of agentless passive constructions found in Med-E-Pops, it is important to note that they are the most frequent type of passive constructions in Med-E-Pops, as explained in Chapter 3.

It is considered that the use of agentless passive constructions in RAs highlights that whatever has happened in the research process is more important than the *who-did-what*. Therefore, it can be inferred that Med-E-Pops writers use these passive constructions to create objective and neutral texts that establish personal distance from the research and the research reporting process as researchers do in their Med-E-RAs.

Although it is easy to semantically associate the research agency with the Med-E-RAs researchers of passive constructions in the texts under study, Med-E-Pops writers confirm this association by using material and mental patterns of experience only carried out by the Med-E-RAs researchers.

In other words, Med-E-Pops writers silence their voices and blur their visibility in order to confirm (by means of the use of material and mental patterns of experience in passive constructions) that the research experience reported in the Med-E-Pops belongs to the actors of the research, that is the Med-E-RAs researchers, who are the ones that carried out the medical research process.

This study, however, makes several noteworthy contributions to the issue of the self-representation of the writer in Med-E-Pops since the use of agentless passive constructions with material and mental verbal acts can be seen to highlight and confirm the visibility of the Med-E-RAs researchers and therefore the invisibility of Med-E-Pops writers. Secondly, the occurrence of passive constructions in Med-E-Pops is not seen in this PhD thesis as a generic feature inherited from the Med-E-RAs genre or a structure that Med-E-Pops writers repeat because of convention in this *evolving* Med-E-Pops genre. To my understanding, the use of these agentless passive constructions denotes professionalism in the narrative process of Med-E-Pops since these texts under study mirror Med-E-RAs' linguistic practise and therefore combine the use of passive constructions with other lexico-grammatical features in order to create linguistically balanced texts. Therefore, an implication of this study is that the usage of agentless passive constructions increases the visibility of the Med-E-RAs researchers in the Med-E-Pops genre and it also helps to build credibility regarding Med-E-Pops. This feature helps the conceptualisation of Med-E-Pops as trustworthy Med-E-RAs adaptations.

As far as active verbs with inanimate subjects (or abstract rhetors) are concerned, it must be noted that this lexico-grammatical feature gained importance in this study on writers' visibility since from a quantitative point of view they were one of the most frequent linguistic features in the Med-E-Pops sub-corpus. As discussed throughout this study, from a qualitative approach I have associated the absence or presence of agency features with the concept of the visibility of Med-E-Pops writers. Therefore, in agreement with Muñoz (1999), this PhD thesis considers that the use of personal pronouns in RAs shows agency as more visible and less impersonal, the use of passive constructions displays a less visible and more personalised agency and finally the use of abstract rhetors conveys a less visible and more impersonal agency. Therefore, this research aimed to explore abstract rhetors as the third linguistic feature portraying invisibility as shown in the cline of the visibility of Med-E-Pops writers introduced in the first two chapters (see section 1.4 figure 2). The use of this lexico-grammatical feature suggests a removal of an explicit agent. This rhetorical intention affects the perception of the authorial visibility since human agency or involvement seems to have been completely removed from the research process, and hence, the Med-E-Pops writer does not seem to mediate in the research or narrative process.

One of the most significant findings to emerge from the study of abstract rhetors in both Med-E-RAs and Med-E-Pops corpora is that the use of this lexico-grammatical feature in medical discourse seems to be a generic convention rather than a writer's choice. Moreover, Med-E-Pops writers are more prone to use these linguistic features than Med-E-RAs researchers.

Surprisingly, the use of abstract rhetors in Med-E-RAs was three times less frequent than in Med-E-Pops. These results indicate that Med-E-Pops writers increase the use of abstract rhetors because of their semantic and rhetorical implications. Regarding the case of this lexico-grammatical feature in Med-E-RAs it has been observed that writers favour the use of some abstract rhetors over others. Nonetheless, the abstract rhetors this PhD thesis set out to observe yielded no difference as far as their various semantic implications were concerned. It should be noted that while the use of the noun *study* or the noun *result* yielded no difference in the ultimate abstract rhetor communicative effect, the distinction between singular or plural (e.g. *study*, *studies*) deserved some consideration. For instance, whereas the singular form of the noun *study* referred to this study in the Med-E-RAs corpus, the plural form of this noun referred to other studies related to a given Med-E-RA and available in the medical literature.

As far as the use of abstract rhetors in Med-E-Pops is concerned, it should be taken into account that this linguistic feature is used in the sub-corpus under study as a way of presenting implications of the Med-E-RAs. It was observed that abstract rhetors function here as an alternative to passive constructions, by presenting data as the source of epistemic judgement. Abstract rhetors present the research as something independent from a human agency. This conclusion, in agreement with results from other contrastive studies on impersonality in RAs and scientific dissemination articles, may explain why most of the abstract rhetors found in Med-E-RAs were kept in the resulting Med-E-Pops. This device helped to maintain the trust of the Med-E-Pops readers in the research process itself. However, in some cases Med-E-Pops writers seem to slightly manipulate this lexico-grammatical feature borrowed from the Med-E-RAs genre as explained below.

A major finding in this dissertation is that the high frequency of abstract rhetors in the popularised texts under study is due to the fact that Med-E-Pops writers transform the Med-E-RAs research process or research story into an object. This objectification seems to keep the Med-E-Pops writers' mediation to a minimum. This process seems to foster Med-E-Pops readers' belief in both the Med-E-RA research and the Med-E-Pop text as a trustworthy vehicle of medical knowledge dissemination. The use of some abstract rhetors over others in Med-E-Pops shows writers' stylistic differences when writing. However, the appearance of abstract rhetors as an adaptation of other linguistic features used in Med-E-RAs is considered to be significant for this PhD thesis data interpretation and final conclusions. In other words, a remarkable percentage of the abstract rhetors found in Med-E-Pops were originally *we + active* verb constructions and passive constructions in Med-E-RAs. In addition to that, the Med-E-RAs abstract rhetors that were kept in Med-E-Pops were slightly modified, as mentioned above, through the use of synonyms that packed all the possible information into a resulting abstract rhetor. That is, most of the times these abstract rhetors were post modified by a noun group that somehow summarise the topic of the medical research.

Another interesting finding is that Med-E-Pops writers sometimes introduce new abstract rhetors that were not used in Med-E-RAs in order to comply with a Med-E-Pops generic feature, that is, the compulsory reference to the Med-E-RAs as the unique medical content source for the Med-E-Pops. Med-E-Pops writers may have decided to introduce this Med-E-RAs reference by means of abstract rhetors in an attempt to convey Med-E-Pops writers' invisibility. The

same rhetorical effect can be identified in the linguistic transformation from passive constructions in Med-E-RAs to abstract rhetors in Med-E-Pops. In other words, from this evidence it can be inferred that an impersonal construction that portrays invisibility is transformed into another linguistic feature that conveys even more invisibility in Med-E-Pops.

The potential rhetorical objectivity implicit in the use of these abstract rhetors in the Med-E-Pops genre may be in direct contradiction to the frequency of abstract rhetors found in Med-E-Pops that repeat the noun used in the Med-E-RAs (as the syntactic subject of the Med-E-Pops abstract rhetor) but followed by a verb different from that used in Med-E-RAs, this verb introducing an additional semantic layer to the information conveyed by the Med-E-Pops. In those cases, the patterns of experience selected by the Med-E-Pops writers introduce strengthened semantic connotations. Med-E-Pops writers use a different pattern of experience to accompany the abstract rhetor from the one used in the Med-E-RAs as is the case with *these findings suggest* to *these findings allow* or *this analysis suggests* to *this analysis concludes*. These changes in the experiential pattern of the verbs make the text less tentative, and therefore reinforce the importance and scientific impact of the findings obtained by Med-E-RAs researchers in their research. To my understanding, this change can be interpreted as a rhetorical shift towards the Med-E-RAs writers' involvement and mediation in the research process, and therefore, a shift towards Med-E-RAs researchers' visibility. In addition to that, although Med-E-Pops writers introduce verbal patterns of experience that highlight the newness and importance of the research carried out by the Med-E-RAs researchers, Med-E-Pops writers still have a voice and in the projection of that voice they again modulate it in order to make it seem voice-less and give visibility to Med-E-RAs researchers.

Ultimately, this study suggests that the significant use of abstract rhetors in Med-E-Pops does not emphasise the visibility of either the Med-E-RAs researchers or the Med-E-Pops writers. To display the Med-E-RAs processes and findings as objects, by means of abstract rhetors makes the audience trust the research. This is because the visibility that is being increased by the use of this lexico-grammatical feature is the visibility of the research itself. This fact makes readers trust Med-E-Pops as reliable vehicles of medical knowledge dissemination, and therefore, it also makes readers conceptualise the Med-E-Pops genre as an understandable and trustworthy source of newly published medical research.

It is also of paramount importance for reaching valid conclusions in this PhD thesis to make further reference to the communicative implications of the fourth and last lexico-grammatical feature studied to reveal the self-representation of writers in Med-E-Pops, reporting sequences, which have been considered here as of paramount importance for the final conclusions of this dissertation. As stated in the introduction and methodology chapters, this dissertation initially conceived the use of the reporting sequence as the lexico-grammatical feature that would clearly convey the visibility of Med-E-Pops writers since it is the Med-E-Pops writers who choose what to quote and how. Nevertheless, the nature of the electronic journalistic reported versions under study and the numerical quantitative data obtained from the analysis make this lexico-grammatical feature one of the clearest signals of the invisibility of Med-E-Pops writers.

Reporting sequences in Med-E-Pops have been approached in this research from different angles in order to validate these findings. It is somewhat surprising that, after the analysis of the presence of other voices different from the voices of Med-E-RAs researchers or Med-E-Pops writers, the analysis of the reporting verbs, used by the Med-E-Pops writers together with the potential semantic implications of these reporting verbs, and the type of information Med-E-Pops writers selected to quote, it becomes quite clear at the discursal level that once again it is both the Med-E-RAs researchers and their research that deserve to be visible.

The results of my study indicate that the use of reporting sequences in Med-E-Pops may not be a rhetorical choice but a generic feature since Med-E-Pops writers merely report what Med-E-RAs researchers have carried out or said in their Med-E-RAs. In addition to that, it is interesting to note that the involvement or mediation of Med-E-Pops writers is virtually unintentional. In other words, Med-E-Pops writers do not mean to make themselves visible by evaluating the Med-E-RAs information reported or to manipulate the readers' perception about the research displayed in the Med-E-RAs. Med-E-Pops writers aim to disguise their voice in order to be perceived as the guide that leads readers' attention to the real agents of the Med-E-RAs research.

It is more than likely that Med-E-Pops writers use their almost negligible voice to bring other voices, different from the voices of Med-E-RAs researchers and Med-E-Pops writers, to the Med-E-RAs in order to enhance the invisibility of Med-E-Pops writers. However, since Med-E-Pops cannot possibly completely avoid their own voice, they create a polyphonic play in their Med-E-Pops by



bringing the voices of external researchers and sometimes the voices of the Med-E-RAs researcher as well. Hiding their voices at the end of this hierarchy of voices, Med-E-Pops writers conduct an orchestra of voices whose ultimate aim is to portray the visibility of the Med-E-RAs researchers, in order to increase Med-E-RAs researchers' prestige and to highlight the value of the findings of Med-E-RAs researchers. Therefore, as a result, the voice of Med-E-Pops writers is the least audible voice. The set of Med-E-RAs external voices brought to Med-E-Pops contribute to the positive status of the researchers and their work. All these external voices, different from the Med-E-RAs researchers, belong to expert and therefore well-known members of the medical discipline. Half of the publications under study use this trust-promoting practise. The purpose of this practice is to reinforce what the Med-E-RAs writers have concluded. Including expert voices (outside of the Med-E-RAs research) builds trust regarding both the status of the pieces of information reported in the Med-E-RAs, which have been included in the Med-E-Pops by the Med-E-Pops writers, and also regarding the Med-E-Pops—since this practice suggests the Med-E-Pops genre gives the highest priority to maintaining scientific rigour. The discursal effect of this generic feature is that potential weak points from a given Med-E-RA are reduced while the strong points are highlighted by voices that deserve greater scientific credibility.

To my understanding, the willingness to bring other voices (those voices being from Med-E-RAs researchers or other expert members of the medical field) is directly associated with the invisibility of Med-E-Pops writers. Therefore, the hidden intention of Med-E-Pops writers is to show how the Med-E-RAs research (and therefore the visibility of Med-E-RAs researchers) deserves to be praised by prestigious members of the field-specific community. Consequently, the voice of Med-E-Pops writers is associated with a deliberate lack of the visibility of Med-E-Pops writers.

This research also aimed to explore the voice of Med-E-Pops writers by studying the attitudes of Med-E-Pops writers towards the information reported by means of these reporting sequences and the semantic implications of the reporting verbs used.<sup>94</sup> The results of the analysis of reporting verbs suggested

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94 This study produced results which, to some extent, corroborate the findings of a great deal of the previous work in this field (e.g. Thompson and Ye 1991 and John 2005). Although the analysis of direct and indirect reporting sequences or the choice of tense in the reporting verbs yielded no significant results as far as the concept of visibility is

that the semantic implications of the verbal acts used in the reporting sequences did not show either traces of the voice of Med-E-Pops writers or the attitude of Med-E-Pops writers towards the Med-E-RAs research.

Regarding this reporting verbs semantic realisation, this research considers that, from both a quantitative and qualitative standpoint the most representative verbs simply report the evidence provided in the Med-E-RAs, build bridges towards the visibility of the Med-E-RAs researchers, lead the reader to what the Med-E-RAs researchers highlighted or point to the Med-E-RAs researchers as a source of medical knowledge production. As a whole, Med-E-Pops reporting sequences denote a direct reference to the real actors of the research process, that is, the medical researchers. As stated in this chapter, Med-E-Pops writers constantly point to who has done what, how and when. Therefore, it should be noted that Med-E-Pops writers willingly deprive their texts of their own voice by constantly bringing the voices of Med-E-RAs researchers into the Med-E-Pops, and therefore, conveying the visibility of Med-E-RAs researchers and the consequent invisibility of Med-E-Pops writers.

Regarding the role or attitude of Med-E-Pops writers towards the information reported, this PhD thesis aimed to measure the degree of the commitment or detachment of Med-E-Pops writers regarding the Med-E-RAs research in order to explore the degree of visibility ensuing from this. Although results so far have pointed to an explicit neutrality and imperceptible involvement of Med-E-Pop writers, and consequently, an almost negligible visibility, it should be considered that these writers still have a voice. Therefore, I approached the reporting verbs Med-E-Pops writers used in their Med-E-Pops by exploring whether Med-E-Pops writers openly denote who-did-what and whether these verbs reflected the research evaluation of Med-E-Pops writers, and therefore whether a more audible voice could be heard.

From this first avenue of research it has been concluded that the reporting verbs used in Med-E-Pops claim the existence of an author (author of the written text); they therefore denote the existence of *authors' acts*. These acts affirm that the responsibility of the research process is ascribed to the Med-E-RAs authors.

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concerned, it should be emphasised that Med-E-Pops writers favour the use of Med-E-RAs direct projections in the conclusion move of Med-E-Pops—which establishes a direct connection to the source of knowledge and therefore to the invisibility of Med-E-Pops writers.

Therefore, it is the Med-E-RAs researchers who are present in the Med-E-Pops and it is then the visibility of Med-E-RAs researchers that is being portrayed, and not that of Med-E-Pops writers. From the second avenue of research it is shown that the potential evaluation of the use of reported verbs could be approached from the viewpoint of the author's stance, the writer's stance or the writer's interpretation. The interpretation of the results suggested that the author's stance is neutral or tentative in Med-E-Pops. The writer's stance in Med-E-Pops, which may deal with the opinion of the Med-E-Pops writer towards the information conveyed, gives no clear signal of the attitude of Med-E-Pops writers towards the information from Med-E-RAs authors although results also show that Med-E-Pops writers present Med-E-RAs information as correct information.

By way of conclusion it should be noted that the majority of the textual verbs in the Med-E-Pops sub-corpus can be said to represent the *authors' acts* that acknowledge the expertise of the Med-E-RAs researchers by reinforcing the reliable aspects of their Med-E-RAs research.

Moreover, Med-E-Pops writers equally ascribe the responsibility of the research and its process to the authors of the source texts, that is, the Med-E-RAs—thereby freeing themselves from any responsibility and visibility. In addition to that, Med-E-Pops show more commitment towards neutrality than towards an explicit and positive conceptualisation of the research process.

Needless to say, if Med-E-Pops writers conveyed an explicit and positive conceptualisation of the research process, Med-E-Pops readers might be suspicious of the Med-E-Pops writers' ultimate communicative intentions. Med-E-Pops readers might not trust these popularised texts if these readers detected traces of writers' manipulation, involvement and, therefore, visibility. Therefore, the non-interpretation of the authors' discourse may directly account for the Med-E-Pops writers' willingness to present their texts as objective. This intended objectivity and neutrality unquestionably tries to blur the visibility of Med-E-Pops writers in order to lead the readers' attention towards the Med-E-RAs researchers and their source texts. In general, through the use of reporting sequences in Med-E-Pops, a choice to convey the invisibility of Med-E-Pops writers is being carried out. It is interesting to note that, once again, these findings lead me to suggest that the choice regarding the invisibility of Med-E-Pops writers is imposed by the Med-E-Pops genre conventions.

At a discursive level, I expected to observe a certain degree of visibility of Med-E-Pops writers when supporting Med-E-RAs research with the reported

sequences selected. In addition, this research also aimed to observe the degree of visibility ensuing from the role that Med-E-Pops writers may acquire by including certain chunks of Med-E-RAs information in preference to others. The results of this study indicate that the reported information mainly reinforces the strong points of the Med-E-RAs research. To a lesser extent, Med-E-Pops writers also play down the limitations of Med-E-RAs research. In these cases, Med-E-Pops writers never add pieces of information that have not been explicitly included in the Med-E-RAs. These results have been backed up by the sub-corpora contrastive analysis (Med-E-RAs and Med-E-Pops) which shows that writers neither manipulate nor alter the core information of the Med-E-RAs. In addition, Med-E-Pops writers show no positive or negative attitude either through the reporting verbs or through the chunks of information quoted. Therefore, it can be concluded that Med-E-Pops writers show a neutral positioning in their role of mere faithful reporters.

Finally, as far as the study of citation sequences is concerned, it should be emphasised that the functions of citation sequences vary in both Med-RAs and Med-E-Pops genres. For instance, in the Med-E-Pops genre the use of the citation sequence *according to* justifies the medical information included in Med-E-Pops. These results are consistent with other studies (e.g. John 2005) and suggest that writers step back from the reported information using this citation sequence. In addition, this citation sequence is hyperlinked in the Med-E-Pops genre to the corresponding Med-E-RAs abstract. Among other functions, this practice directly leads readers' attention to the source text (Med-E-RAs), enables the association of Med-E-Pops genre with the feeling of reliability and professional practice, and therefore makes readers trust the Med-E-Pops genre. Needless to say, this practice also increases the prestige of the Med-E-RAs researchers and therefore their visibility. Med-E-Pops writers create an objective scenario, freeing their texts from any trace of Med-E-Pops writers' authorship and mediation, and therefore, visibility.

Despite the intervention of Med-E-Pops writers in the preparation of Med-E-Pops, these writers remain invisible, although a weak voice can still be heard. In agreement with Thompson and Ye (1991), the lack of visibility of Med-E-Pops writers, denotes the existence of a research author—and not the existence of a Med-E-Pop writer. Therefore, the responsibility of the research process is ascribed to the author of the source text, that is, the Med-E-RAs researcher. It is the visibility of Med-E-RAs researchers which is created to build trust regarding both the Med-E-RAs research (reinforcing the importance of Med-E-RAs

findings outside academia) and Med-E-Pops as trustworthy vehicles of medical knowledge dissemination.

As already discussed in this dissertation, the results obtained with regard to the generic and lexico-grammatical features explored lead me to conclude that the invisibility that the Med-E-Pops writers attempt to achieve has as its ultimate aim the dissemination of reliable medical information among Internet readers worldwide. Med-E-Pops writers represent themselves as invisible for the sake of this genre ultimate aim—which is to be conceptualised as a scientific reliable genre. It should then be concluded that the invisibility of Med-E-Pops writers is constrained by Med-E-Pops generic conventions and their ultimate communicative aim.

Consequently, this *research story* which was initially set up and contextualised in genre studies with the ultimate goal of studying writers' self-representation in Med-E-Pops, has led this research back to genre studies in order to summarise this contribution to the study of writers' self-representation.

Med-E-Pops should be conceptualised as a new combination of Med-RAs form and purpose, embedded in the medical colony, which reorganises linguistic, textual and scientific Med-RAs content for the sake of the understanding of the Internet community. This new balanced understanding of form and function does not represent a threat; on the contrary it constitutes a new opportunity for sharing reliable medical knowledge within an international and varied electronic audience outside academia. To conclude, we must consider that Med-E-Pops are therefore differentiated from the genre they draw upon (Med-E-RAs) and recognised, as well as accepted, in their discourse community reading and writing practises.

So far this PhD thesis has aimed to show all the theoretical and methodological approaches suitable for the analysis and interpretation of writers' self-representation and its repercussions on the Med-E-Pops genre. I will now discuss the potential contribution and applicability of this research.

It may be useful for students wishing to improve their competence in written English to be made aware of all the implications of the concept of the writer's voice and the realisation of that voice in a given genre. In addition, if these students or their current teachers consider it necessary and justifiable, they could adjust their practices and conventions in the drafting of written texts depending on the genre their texts may be ascribed to and the communicative purpose these writers may

be attempting to achieve. For that ultimate aim, a reflection on the role of the writer's voice is of enormous importance, since how writers represent themselves and create the ensuing visibility could make that given text meet (or fail to meet) its communicative expectations. If not, an incorrect conceptualisation of the writer's voice and visibility in a written text may give a wrong impression to readers who may be expecting different rhetorical conventions that are characteristic of a given genre. If that were the case, readers would reject that given text.

Similarly, I would add to the above statement that rhetorical conventions might need to be adjusted accordingly in each of the cases and genres in order for writers to be fully successful. For example, in journalism studies this would not entail the strict personal preference of certain conventions (related to the creation of the writer's voice) over others but only an adjustment of those conventions to meet possible readers' expectations, genres, norms and values, thereby more easily ensuring successful communication between members of different discipline communities which, for instance, have to popularise certain texts for disseminating or transferring purposes. We must consider that nowadays there is a growing interest in disseminating scientific findings among lay people. In addition, there is an increasing social demand for scientific knowledge. On the one hand, as Chapter 1 emphasises, lay people want to be informed about health research, R+D and how these related findings can, and will, improve their quality of life (Kuteeva and McGrath 2012). On the other hand, researchers need to disseminate their findings not only in their scientific community but also outside academia, since one of the most fruitful scientific impact channels and source of funding is the potential dissemination and transferability of scientific findings into society. This process raises awareness among scientific communities such as the University of Zaragoza and its workshops on scientific knowledge dissemination (*Jornadas de Divulgación Científica* organised by the University of Zaragoza since 2008) to worldwide awards on medical journalism issued for instance by national and international institutions and pharmaceutical labs such as Boehringer Ingelheim.<sup>95</sup> For instance, it was in the II Scientific Dissemination Workshop (*II Jornadas de Divulgación Científica*) organised by the University of Zaragoza when Dr. Badiola (an expert on anemology diseases, University teacher, former Rector and President of the general committee of the Veterinarian Spanish Association) highlighted the need to create what I have labelled as a

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95 See <http://www.aragoninvestiga.org/tag/divulgacion-cientifica/> or [www.premioperiodisticos.es](http://www.premioperiodisticos.es) for further reading.

trustworthy *health cyberjournalism* that could offer RAs popularised electronic versions made from reliable sources, with constrained emphatic attitudes towards the health issue and reliable scientific medical information, but still understandable. He added that, unlike the social movement arising from Severe Acute Respiratory Syndrome (SARS) between 2002 and 2004 information, *health cyberjournalism* must not alarm the lay population unnecessarily. Consequently, this social scenario calls for the creation of trustworthy medical dissemination genres, such as the Med-E-Pops genre, and therefore, the study and teaching of generic and lexico-grammatical conventions of how to create these texts ascribed to the field of journalism.<sup>96</sup> Therefore, not only journalists but also scientists who aim to disseminate their findings to a lay readership should master both how to represent themselves in their popularised texts and how to meet electronic popularised texts generic conventions.

Despite the social need of this genre mentioned above, little progress seems to have been made in the particular case of Spain until recently. Dr. Mira-Solves (2010) disseminated his own RA in a women's magazine arguing that in Spain 40% of doctors thought that the Internet was complicating their relationships in the consulting room.<sup>97</sup> However, various Spanish institutions such as the Spanish Association of General Practitioners and Community Medicine (*Sociedad Española de Medicina de Familia y Comunitaria*: SEMFYC) claim that due to the current Spanish economic situation and the ensuing repercussions regarding the Spanish Health System, it seems sensible that patients turn to the Internet to read further, since consulting rooms and health services are crowded with patients, and doctors barely have five-minute slots to attend to each patient. This association recommends doctors "prescribe" websites to their patients to help their patients find helpful information—and also prevent them from reading unsuitable sources that might mislead them. In addition, according to the last study (2011) conducted by the Spanish Communications Observatory (*Observatorio Nacional de Comunicaciones*), 78.2% of patients would like to receive advice related to trustworthy websites from their doctors. It can therefore

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96 To read more about the *Jornadas de Divulgación Científica* organised by the University of Zaragoza see [http://www.unizar.es/gobierno/vr\\_institucionales/ucc/jornadasdivulgacion.htm](http://www.unizar.es/gobierno/vr_institucionales/ucc/jornadasdivulgacion.htm).

97 To read more about this publication see: Mira JJ, Guilabert M, Ortíz L, Navarro IM, Pérez-Jover MV, Aranz JM. "Noticias de prensa sobre errores clínicos y sensación de seguridad al acudir al hospital". *Gaceta Sanitaria*. 2010;24(1): 33–39 and *Mujer de Hoy* publication on June 12<sup>th</sup>, 2010 edition.

be seen that the conceptualisation of *health cyberjournalism* in Spain is in a process of change since even the National Association of Health Informers (*Asociación Nacional de Informadores de la Salud: ANIS*) promoted, in agreement with the NGO *Health on the Net*, the creation of a trust certificate. This certificate will state that medical scientific rigour has been maintained and that the linguistic and generic content is understandable for a lay audience—similar to the plain language campaign in the U.K., applied, however, to health news. It was the Spanish Newspaper *El País* (July 31<sup>st</sup>, 2012) that emphasised that this “much-needed concern about *health cyberjournalism*” was not taken seriously in Spanish society by hospitals and health institutions. This publication highlighted the findings of various studies which concluded that whereas patients were turning to *Dr. Google* and *Wikipedia*, Spanish practitioners were directly fighting this trend by recommending electronic publications, most of which were published in the USA, such as the *New York Times Health Guide* and *DocGuide*—as my survey-based study results also suggest in Chapter 2. Therefore, this PhD thesis can also be considered to contribute to rising awareness about the need to respond to the increasing demand of such electronic publications (Med-E-Pops), this time written in Spanish in order to be easily disseminated and understood by Spanish lay people.

Similarly, the findings reported in this dissertation may be also useful for translators and language mediators and advisors, as they could help Spanish journalists and medical personnel in making appropriate rhetorical choices when translating and adapting Med-RAs written in English into Med-E-Pops but this time written in Spanish. It is widely known that in the hard sciences and especially in the field of medicine, both RAs and research in general are written in English as a vehicle of international communication and knowledge exchange. Therefore, due to the high speed of publication in the medical field, academic knowledge is disseminated in English, and therefore, Med-E-Pops are directly written and published in English and not translated from English into other languages.

Therefore, making senior and future professionals of the fields of English, journalism and health science studies aware of the importance of this new genre of medical electronic knowledge dissemination and the implication of projecting themselves appropriately through these texts becomes of paramount importance, as this dissertation has attempted to show.



## Limitations and future research

There are a number of limitations this study presents which need to be addressed. First of all, the analysis can be considered to be based on a small-scale corpus of Med-RAs and Med-E-Pops in a single discipline (medicine). As outlined in the second chapter, the size of the corpus was determined by the specific aims of this thesis and its methodological approach. The comprehensive, contextualised, corpus-driven analysis I was aiming for called for a specialised small-scale, manageable corpus. Further, decontextualisation could be overcome by analysing a ready-made comparable corpus compiled by the same linguist who was later to analyse it (Hunston 2002).<sup>98</sup> Nevertheless, the use of a small-scale corpus implies that the results can only be tentative. In order to obtain firmer conclusions the study may need to be replicated in a larger corpus.

Secondly, the corpus was restricted to the Med-E-RAs and their corresponding Med-E-Pops as final written products. Therefore, one cannot extrapolate the results to other disciplines (RAs and their corresponding popularised texts) but consider them as restricted to the field of medicine. Although my conclusions cannot be extrapolated to other fields, medicine (together with perhaps, physical sciences) is the field where most popularizations take place. Nonetheless, based on limitations to previous studies (Herrando-Rodrigo 2010) I have compiled a corpus with texts from fields which cover quite a wide range of the entire medical discipline (oncology, gynaecology, psychiatry etc.). A next step in the analysis could be to analyse to what extent the differences found in this comparable corpora of Med-RAs and Med-E-Pops are more or less striking in other disciplinary areas. These hypotheses should be tested through similar analyses to the one presented here in RAs and their corresponding popularised texts from other social interest fields related, for instance, to R&D. Another possible line of future research would be to pursue a long-term diachronic study, since Med-E-RAs and Med-E-Pops studied here were mainly published in 2009. After a certain period of time, a comparable corpus to the one presented here could be compiled and analysed along the same parameters to reveal whether the allegedly standardisation of the generic conventions and the ensuing voice manifestations of Med-E-Pops writers vary and why.

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98 It should be remembered that decontextualisation is one of the commonly stated drawbacks of corpus linguistics. (Flowerdew 2004),

Thirdly, as regards the comparable corpora upon which the analysis is based, a great number of variables were controlled during its compilation, as Chapter 2 shows. In this last respect, the provenance of the Med-E-RAs authors and, to a lesser extent, of the Med-E-Pops writers, was not totally controlled, since doctors from different nationalities publish their Med-RAs in specialised journals which are published in the U.S.A and the U.K. Therefore, since these academic journals are discipline-specific international academic journals I considered these Med-RAs as final products, disregarding their publication process and the possible mediation of linguists. As for the Med-E-Pops, it could be seen that not all Med-E-Pops quoted their authorship; however, Med-E-Pops were published by American and British electronic journals. Therefore, it was assumed that it was native speakers of English who wrote all the Med-E-Pops under study. In addition to that, variables such as the age and gender of Med-E-RAs and Med-E-Pops writers, which may affect the self-representation of the writers, were not coded or taken into consideration in the analysis and interpretation of results. It has been recently concluded that individual aspects do play an important role in RA writing, at least as regards the display of an authorial voice (Fløttum 2003b; Fløttum *et. al.* 2006; Yamamoto 2006). Therefore, it may be useful to code these factors and study further the use of which lexico-grammatical features are affected by these variables. In general, the main variable when compiling the corpus under study was the survey-based approach carried out in one Spanish region (*Aragón*) with medical informants who were affiliated to the Faculty of Medicine (University of Zaragoza) and who more specifically, were also working at the two main city hospitals (*Hospital Clínico Universitario Lozano Blesa* and *Hospital Universitario Miguel Servet*). Therefore, the representativeness of these results could be considered as limited. In addition, from a reception theory viewpoint, the opinion of the Aragonese patients could also have been taken into account. However, inconsistent results from previous research (Herrando-Rodrigo 2014) discouraged me from following that methodology and research path in the survey-based study. Finally, one further reasonable question may arise related to this study and this survey-based approach. This research has been carried out using English publications and not Spanish publications, because as Chapter 1 shows, it is English that is the language of science, and hence, the vehicle of scientific dissemination. To my knowledge, and as the previous subsection mentions, Spanish hospitals, health institutions and governmental departments are not responding to this social need yet, and therefore it may be claimed that the genre of Med-E-Pops is not a very developed one in the Spanish situation. Besides, the speed of Med-RA publications and the need to disseminate these

findings directly in English constrain their translation into other languages and publication in other means of communication other than the Internet. This may also justify why Spanish doctors admit to reading and recommending this Med-E-Pops genre.

There is a possible fourth limitation of this study which arises not so much from the corpus, but from the theoretical framework on which the analysis rests. This dissertation states that Med-E-Pops genre is a systematised and trustworthy genre. Therefore, contrary to some approaches to popularised texts (Garcés-Conejos and Sánchez-Macarro 1998; Garzone 2006), there are not different levels or types of Med-E-Pops. Therefore, this research validates the assumption that the Med-E-Pops genre can be approached and studied through its generic conventions and lexico-grammatical features, the former having been associated in this study with the concept of the writer's voice. It might be thought that Med-E-Pops writers carry out linguistic choices to represent themselves in order to suit the Med-E-Pops genre. These apparent unconscious linguistic choices are embedded and constrained by this genre's ultimate aim and its communicative purpose, that is, to make the reader trust the text. Therefore, this dissertation argues that writers carry out unconscious linguistic choices to become invisible, and hence, meet the genre expectations. Actually, what this PhD thesis concludes is that writers simply apply certain lexico-grammatical features which characterise the genre under study. Therefore, this research raises a question that requires further investigation. This question is whether other popularised genres may replicate the use of the same lexico-grammar as the one used by Med-E-Pops genre in order to represent writers as invisible mediators for the sake of these popularised genres' ultimate communicative aim. Future research could therefore concentrate on such an investigation.

Finally, the underlying motivation of this research, as outlined in the introduction, is to conceptualise the genre of Med-E-Pops and how this genre constrains the concept of the writer's voice. The fact that Med-E-Pops writers become almost voice-less, and therefore invisible, renders this newly created Med-E-Pops genre trustworthy. It is therefore essential for successful writers to represent themselves appropriately in a given text in order to suit the genre the text is ascribed to. In order to prepare useful awareness-raising materials, the first necessary step seems to be the discovery of differences in the generic conventions and the lexico-grammar used in Med-RAs and Med-E-Pops genres. Therefore, once aspects which may interfere with successful communication in the new international electronic context of medical knowledge dissemination are

defined, we will be in a position to create materials which truly help writers to be successful in writing trustworthy popularised texts. These materials will need to be used critically in the writing classroom as suggested by Swales (1997), Curry and Lillis (2004) and Tardy (2004) among others, so that learners become aware of the implications, risks and dangers of either maintaining generic conventions they commonly use when dealing with different genres ascribed to the same colony (as Med-RAs and Med-E-Pops) or modulating their voice inadequately.

On the basis of the limitations and especially the outlined future research possibilities, it seems that the genre and self-representation analysis presented in this dissertation is the first step of a long-term research path which I consider to be fully justified and necessary to follow.



## APENDIX



## Appendix 1: Pairs of Med-E-RAs and Med-E-Pops (titles, sources and dates of publication)

Pair	Med-E-RAs titles	Source	Date of publication	Med-E-Pops titles	Source	Date of publication
1	Fetal exposure to herpesviruses may be associated with pregnancy-induced hypertensive disorders and preterm birth in a Caucasian population	<i>BJOG An International Journal of Obstetrics and Gynaecology</i>	2008	Having a Baby: Blood Pressure Troubles Linked to a Virus Infection	<i>New York Times Health</i>	March 4 <sup>th</sup> , 2008
2	Presence of depressive symptoms during early pregnancy and the risk of preterm delivery: a prospective cohort study	<i>Human Reproduction, Vol.24, No.1 pp. 146-153.</i>	2009	Having a Baby: Depression Linked to Premature Deliveries	<i>New York Times Health</i>	November 4 <sup>th</sup> , 2008
3	Identification of Tuberculosis Susceptibility Genes with Human Macrophage Gene Expression Profiles	<i>PlosPathogens</i>	December 2008	Opening the door to TB	<i>Nature</i>	February 2009
4	Predictors of driving safety in early Alzheimer disease	<i>Neurology</i>	Vol. 72 February 10 <sup>th</sup> , 2009	Tests May Predict Driving Safety in People with Alzheimer's Disease	<i>HealthNews</i>	February 2009
5	Predicting risk of type 2 diabetes in England and Wales: prospective derivation and validation of QDScore	<i>British Medical Journal</i>	March 25 <sup>th</sup> 2009	Awareness: Calculator Gives Risk of Type 2 Diabetes	<i>New York Times Health</i>	March 24 <sup>th</sup> , 2009
6	Comparing the Quality of the Suture Anastomosis and the Learning Curves Associated with Performing Open, Freehand, and Robotic-Assisted Laparoscopic Pyeloplasty in a Swine Animal Model	<i>American College of Surgeons</i>	April 4 <sup>th</sup> , 2009	Robot Improves Suture Proficiency More Rapidly for Surgeons Inexperienced in Laparoscopic Techniques	<i>Doctor's Guide</i>	April 20 <sup>th</sup> , 2009



7	Timing of initiation of antiretroviral therapy in AIDS-free HIV-1-infected patients: a collaborative analysis of 18 HIV cohort studies	<a href="http://www.thelancet.com">www.thelancet.com</a> Published online DOI:10.1016/S0140-6736(09)60612-7	April 9 <sup>th</sup> , 2009	AIDS: Earlier Drug Treatment for AIDS Saves More Lives, Study Finds	<i>New York Times Health</i>	April 13 <sup>th</sup> , 2009
8	Effectiveness of haemodialysis access with an autologous tissue-engineered vascular graft: a multicentre cohort study	<i>The Lancet</i>	Vol 373 April 25 <sup>th</sup> , 2009	The First Completely Autologous Tissue-Engineered Vascular Grafts For Dialysis Patients - A Revolutionary Milestone	<i>Medical News Today</i>	April 28 <sup>th</sup> , 2009
9	A phase II study of weekly topotecan and docetaxel in heavily treated patients with recurrent uterine and ovarian cancers	<i>Gynecol Oncol</i> (2009), doi:10.1016/j.ygyno.2009.02.018	April 26 <sup>th</sup> , 2009	New Treatment Shows Promise Against Recurrent Gynecologic Cancers	<i>Doctor's Guide</i>	July 21 <sup>st</sup> , 2009
10	Disorders of Balance and Vestibular Function in US Adults	<i>Arch. Intern. Med.</i>	Vol.169(10):938-944. May 25 <sup>th</sup> , 2009	Survey Suggests Higher Risks of Falls Due To Dizziness In Middle-Aged And Older Americans	<i>Johns Hopkins News Release</i>	May 20 <sup>th</sup> , 2009
11	The Child Anxiety Prevention Study: Intervention Model and Primary Outcomes	<i>Journal of Consulting and Clinical Psychology</i>	2009, Vol. 77, No. 3, 580-587	Children of Adults with Anxiety Disorder May Need Help Too	<i>Johns Hopkins News Release</i>	June 1st, 2009
12	Aspirin in the primary and secondary prevention of vascular disease: collaborative meta-analysis of individual participant data from randomised trials	<i>The Lancet</i>	Vol 373 May 30, 2009	Benefits of Aspirin as Primary Prevention of Vascular Events Do Not Outweigh Risks	<i>Doctor's Guide</i>	May 29 <sup>th</sup> , 2009
13	Perinatal Outcomes in Nutritionally Monitored Obese Pregnant Women: A Randomized Clinical Trial	<i>Journal of the National Medical Association</i>	Vol. 101, N <sup>o</sup> . 6, June 2009 569	Study Suggests Obese Women Should Not Gain Weight During Pregnancy	<i>Doctor's Guide</i>	June 2 <sup>nd</sup> , 2009

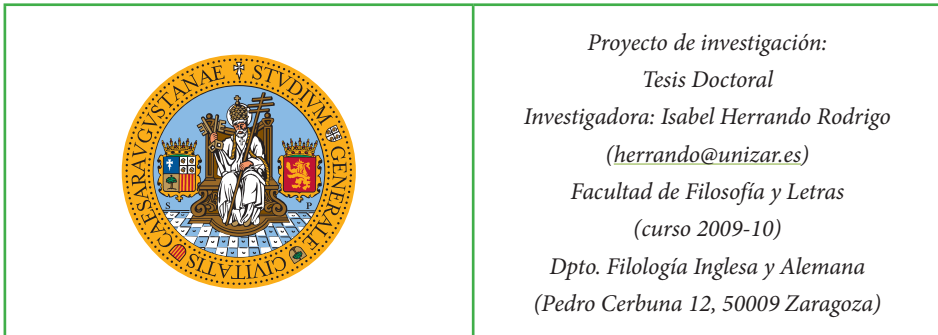
14	Higher serum folate levels are associated with a lower risk of atopy and wheeze	<i>J Allergy Clin Immunol</i>	Vol.123, No. 6: 1253-1259 June 2009	Folic Acid May Help Treat Allergies, Asthma	<i>Johns Hopkins News Release</i>	April 30 <sup>th</sup> , 2009
15	Prevalence, treatment, and associated disability of mental disorders in four provinces in China during 2001-05: an epidemiological survey	<i>The Lancet</i>	Vol 373(9680): 2041-53 June 13, 2009	Mental Illness: Far More Chinese Have Mental Disorders Than Previously Reported, Study Finds	<i>New York Times Health</i>	June 16 <sup>th</sup> , 2009
16	Mediterranean Diet, Alzheimer Disease, and Vascular Mediation	<i>Archives of Neurology</i>	June 16 <sup>th</sup> , 2009	Mediterranean Diet Aids the Aging Brain: Study Eating plan seems to reduce the risk of cognitive impairment, dementia	<i>Health Day News</i>	February 2009
17	Interaction Between the Serotonin Transporter Gene (5-HTTLPR), Stressful Life Events, and Risk of Depression	<i>JAMA</i>	Vol 301, No. 23 June 17, 2009	Report on Gene for Depression Is Now Faulted	<i>New York Times Health</i>	June 17 <sup>th</sup> , 2009
18	Venom immunotherapy reduces large local reactions to insect stings	<i>J Allergy Clin Immunol</i> Available online May 14, 2009	Vol.123, No. 6:1371-1375. June 2009	Insect Venom Shots Work For Severe "Local" Sting Reactions, Too	<i>Johns Hopkins News Release</i>	June 29 <sup>th</sup> , 2009
19	Effect of Gastric Bypass Surgery on Kidney Stone Disease	<i>The Journal of Urology</i>	Vol. 181, 2573-2577, June 2009	ROUX-EN-Y Weight Loss Surgery Raises Kidney Stone Risk	<i>Johns Hopkins News Release</i>	June 17 <sup>th</sup> , 2009
20	Contact With Beach Sand Among Beachgoers and Risk of Illness	<i>American Journal of Epidemiology</i>	Vol. 170, No. 2:164-172. June 18 <sup>th</sup> , 2009	Hazards: At the Beach, Watch Out for Dirty Sand, Too	<i>New York Times Health</i>	July 21 <sup>st</sup> , 2009
21	Changes in case fatality of aneurysmal subarachnoid haemorrhage over time, according to age, sex, and region: a meta-analysis	<i>The Lancet</i>	Vol 8 (7): 635-642 July 2009	Improvements in Diagnosis, Treatment Linked to Reduced Risk of Death in Patients With Brain Haemorrhage	<i>Doctor's Guide</i>	June 3 <sup>rd</sup> , 2009

22	Bone Mineral Density in Estrogen-Deficient Young Women	<i>J Clin Endocrinol Metab</i>	94(7):2277-2283 July 2009	Study Defines Strategy to Protect Bones in Women, Girls With Primary Ovarian Insufficiency	<i>Doctor's Guide</i>	June 19 <sup>th</sup> , 2009
23	Rates of Serious Infection after Changes in Regimens for Medical Abortion	<i>New England Journal of Medicine</i>	July 9 <sup>th</sup> , 2009 Vol 361:2	Abortion Pill Study Suggests Way to Limit Infection	<i>New York Times Health</i>	July 9 <sup>th</sup> , 2009
24	Prevalence and Repair of Intraoperatively Diagnosed Patent Foramen Ovale and Association With Perioperative Outcomes and Long-term Survival	<i>JAMA</i>	Vol 302(3):290-297 July 2009	Not Clear Benefit Seen for Incidentally Repairing Patent Foramen Ovale	<i>Doctor's Guide</i>	July 14 <sup>th</sup> , 2009
25	A Pooled Analysis of the Effect of Condoms in Preventing HSV-2 Acquisition	<i>Arch Intern Med.</i>	Vol 169, No 13:1233-1240. July 13, 2009	Condoms Associated With Moderate Protection Against Herpes Simplex Virus 2	<i>Doctor's Guide</i>	July 15 <sup>th</sup> , 2009
26	Use of fertility drugs and risk of ovarian cancer: Danish population based cohort study	<i>BJM</i>	July 15 <sup>th</sup> , 2009 2009;338:b249	Fertility Drugs and Ovarian Cancer Not Linked, Study Says	<i>New York Times Health</i>	July 15 <sup>th</sup> , 2009
27	Hormone Therapy and Ovarian Cancer	<i>JAMA</i>	July 15 <sup>th</sup> , 2009 302(3):298-305	Hormone Therapy Use Associated With Increased Risk of Ovarian Cancer	<i>Doctor's Guide</i>	July 15 <sup>th</sup> , 2009
28	High Levels of Circulating VEGFR2+ Bone Marrow -Derived Progenitor Cells Correlate with Metastatic Disease in Patients with Pediatric Solid Malignancies	<i>Clin Cancer Res</i>	Vol. 15(14) 4561-4571 July 15, 2009	Circulating Blood Cells Are Important Predictors of Cancer Spread in Children	<i>Doctor's Guide</i>	July 15 <sup>th</sup> , 2009
29	Parenting stress and psychological functioning among mothers of preschool children with autism and developmental delay	<i>Autism</i>	Vol 13(4): 375-387. 2009	Parents of Children With Autism Report High Stress Levels	<i>Health Day News</i>	July 17 <sup>th</sup> , 2009
30	Evolution and Survival on Eutherian Sex Chromosomes	<i>Plos Genetics</i> <i>Published on line July 2009</i>	Vol 5(7): e1000568	Male Sex Chromosome on Its Way Out: Study	<i>Health Day News</i>	July 17 <sup>th</sup> , 2009

31	Positive and Negative Religious Coping and Well-Being in Women with Breast Cancer	<i>Journal of Palliative Medicine</i>	Vol 12, No 6:537-545 July 2009	Spiritual Outlook Can Affect Mental Health in Breast Cancer	<i>Health Day News</i>	July 17 <sup>th</sup> , 2009
32	Prenatal Airborne Polycyclic Aromatic Hydrocarbon Exposure and Child IQ at Age 5 Years	<i>Pediatrics</i> published online July 20, 2009	Vol. 124, N° 2, e195-e202 August 2009	Exposure to Common Pollutant in Womb Might Lower IQ	<i>HealthDay News</i>	July 20 <sup>th</sup> , 2009
33	Exposure to Tobacco on the Internet: Content Analysis of Adolescents' Internet Use	<i>Pediatrics</i> published online July 20, 2009	Vol. 124, N° 2, e180-e186 August 2009	Internet May Be Newest Venue for Teen Tobacco Exposure	<i>HealthDay News</i>	July 20 <sup>th</sup> , 2009
34	Phosphorus and Potassium Content of Enhanced Meat and Poultry Products: Implications for Patients Who Receive Dialysis	<i>Clin J Am Soc Nephrol</i> Draft available on July 23 <sup>rd</sup> , 2009	4: 1370-1373, August 2009	Fresh-Meat Additives May Be Dangerous for Kidney Patients	<i>HealthDay News</i>	July 23 <sup>rd</sup> , 2009
35	Repeated measures of serum glucose and insulin in relation to postmenopausal breast cancer	<i>Int. J. Cancer. International Union Against Cancer</i> available online July 23 <sup>rd</sup> , 2009 as a draft for the Medical School of the University of Sheffield	Available on line in August. 2009 in press: Dec 1; 125(11): 2704-10	Einstein Scientists Link Elevated Insulin to Increased Breast Cancer Risk	<i>Science Daily</i>	July 9 <sup>th</sup> , 2009
36	When to Start Antiretroviral Therapy in Resource-Limited Settings	<i>Ann Intern Med.</i>	Vol.151, No 3:157-166. August 4, 2009	Treatment For HIV In South Africa Would Be More Effective If Started Earlier	<i>Medical News Today</i>	July 21 <sup>st</sup> , 2009
37	Peginterferon Alfa-2b or Alfa-2a with Ribavirin for Treatment of Hepatitis C Infection	<i>N Engl J Med</i>	August 6th, 2009;361:580-93	Top Hepatitis C Treatments Equally Effective	<i>Johns Hopkins News Release</i>	July 22 <sup>nd</sup> , 2009

38	Surgical Mask vs N95 Respirator: for Preventing Influenza Among Health Care Workers	<i>JAMA Journal of American Medical Association</i>	October 10 <sup>th</sup> 2009	Surgical Masks Non - Inferior to N95 Respirators for Preventing Influenza Among Health Care Workers	<i>Docguide</i>	October 10 <sup>th</sup> , 2009
39	Exposure to Fine Particulate Matter and Acute Effects on Blood Pressure: Effect Modification by Measures of Obesity and Location	<i>Journal of Epidemiology and Community Health</i>	October 15 <sup>th</sup> 2009	Smog Tougher on the Obese	<i>HealthDay</i>	October 15 <sup>th</sup> , 2009
40	Critically Ill Patients With 2009 Influenza A(H1N1) Infection in Canada	<i>JAMA Journal of American Medical Association</i>	October 21 <sup>st</sup> 2009	Influenza A(H1N1) Critical Illness Can Occur Rapidly; Predominantly in Young Patients	<i>DocGuide</i>	October 21 <sup>st</sup> , 2009

## Appendix 2: Questionnaire distributed among medical participants for this survey-based approach



Before beginning, please write your Field/Specialty\_\_\_\_\_ and years of experience as practitioner\_\_\_\_\_

1. How often do you read medical articles written in English?
2. Do you read medical popularizations published in English on the Internet (New Your Times Health guide, Doc Guide, etc?<sup>99</sup> (If so, please mention the electronic journal you usually read) Why?
3. If you read a medical popularization and you are interested in the topic covered in it, do you read the corresponding research article?
4. If you think that research articles differ from popularizations, what do you think the differences are?
  - USE OF LANGUAGE. Have you observed any differences? Tick the ones you have observed:
    - Passive
    - Reported speech
    - Pronouns
    - Nouns
    - Others: .....

<sup>99</sup> By Medical popularizations I mean medical research articles versions designed for the lay or general public different from the medical personnel.

- PURPOSE. Is the content expressed differently in medical research articles and in electronic popularizations? If so, could you identify the reasons by ticking the ones you have observed:
    - Different audience (different readers)
    - Different means of publications
    - Others: .....
  - STRUCTURE. Experimental medical research articles are generally structured following the so-called IMRAD pattern (Introduction, Methods, Results And Conclusions)
5. Do medical popularizations follow the same IMRAD pattern as experimental research articles do?

*La investigadora se compromete a preservar el anonimato de las personas que decidan participar en este estudio. Cualquier resultado y/o datos que deriven de la participación del presente estudio podrán ser facilitados si así se solicita. Se entiende que las personas participantes pueden ejercer su derecho a negarse a contestar alguna de las preguntas de este cuestionario, si así lo estiman oportuno.*

Muchas gracias por su colaboración

### Appendix 3: Med-E-RAs and Med-E-Pops titles

<i>Pair</i>	<i>Med-E-RAs titles</i>	<i>Number of words in Med-E- RAs titles</i>	<i>Med-E-Pops titles</i>	<i>Number of words in Med-E-Pops titles</i>
1	Fetal exposure to herpesviruses may be associated with pregnancy-induced hypertensive disorders and preterm birth in a Caucasian population	18	Having a Baby: Blood Pressure Troubles Linked to a Virus Infection	11
2	Presence of depressive symptoms during early pregnancy and the risk of preterm delivery: a prospective cohort study	17	Having a Baby: Depression Linked to Premature Deliveries	8
3	Identification of Tuberculosis Susceptibility Genes with Human Macrophage Gene Expression Profiles	11	Opening the door to TB	5
4	Predictors of driving safety in early Alzheimer disease	8	Tests May Predict Driving Safety in People with Alzheimer's Disease	10
5	Predicting risk of type 2 diabetes in England and Wales: prospective derivation and validation of QDScore	16	Awareness: Calculator Gives Risk of Type 2 Diabetes	8
6	Comparing the Quality of the Suture Anastomosis and the Learning Curves Associated with Performing Open, Freehand, and Robotic-Assisted Laparoscopic Pyeloplasty in a Swine Animal Model	25	Robot Improves Suture Proficiency More Rapidly for Surgeons Inexperienced in Laparoscopic Techniques	12
7	Timing of initiation of antiretroviral therapy in AIDS-free HIV-1-infected patients: a collaborative analysis of 18 HIV cohort studies	18	AIDS: Earlier Drug Treatment for AIDS Saves More Lives, Study Finds	11
8	Effectiveness of haemodialysis access with an autologous tissue-engineered vascular graft: a multicentre cohort study	14	The First Completely Autologous Tissue-Engineered Vascular Grafts For Dialysis Patients - 'A Revolutionary Milestone'	14
9	A phase II study of weekly topotecan and docetaxel in heavily treated patients with recurrent uterine and ovarian cancers	19	New Treatment Shows Promise Against Recurrent Gynecologic Cancers	8



10	Disorders of Balance and Vestibular Function in US Adults	9	Survey Suggests Higher Risks Of Falls Due To Dizziness In Middle-Aged And Older Americans	14
11	The Child Anxiety Prevention Study: Intervention Model and Primary Outcomes	10	Children of Adults with Anxiety Disorder May Need Help Too	10
12	Aspirin in the primary and secondary prevention of vascular disease: collaborative meta-analysis of individual participant data from randomised trials	19	Benefits of Aspirin as Primary Prevention of Vascular Events Do Not Outweigh Risks	13
13	Perinatal Outcomes in Nutritionally Monitored Obese Pregnant Women: A Randomized Clinical Trial	12	Study Suggests Obese Women Should Not Gain Weight During Pregnancy	10
14	Higher serum folate levels are associated with a lower risk of atopy and wheeze	14	Folic Acid May Help Treat Allergies, Asthma	7
15	Prevalence, treatment, and associated disability of mental disorders in four provinces in China during 2001–05: an epidemiological survey	19	Mental Illness: Far More Chinese Have Mental Disorders Than Previously Reported, Study Finds	13
16	Mediterranean Diet, Alzheimer Disease, and Vascular Mediation	7	Mediterranean Diet Aids the Aging Brain: Study Eating plan seems to reduce the risk of cognitive impairment, dementia	18
17	Interaction Between the Serotonin Transporter Gene (5-HTTLPR), Stressful Life Events, and Risk of Depression	14	Report on Gene for Depression Is Now Faulted	8
18	Venom immunotherapy reduces large local reactions to insect stings	9	Insect Venom Shots Work For Severe "Local" Sting Reactions, Too	10
19	Effect of Gastric Bypass Surgery on Kidney Stone Disease	9	ROUX-EN-Y Weight Loss Surgery Raises Kidney Stone Risk	8
20	Contact With Beach Sand Among Beachgoers and Risk of Illness	10	Hazards: At the Beach, Watch Out for Dirty Sand, Too	10

21	Changes in case fatality of aneurysmal subarachnoid haemorrhage over time, according to age, sex, and region: a meta-analysis	18	Improvements in Diagnosis, Treatment Linked to Reduced Risk of Death in Patients With Brain Haemorrhage	15
22	Bone Mineral Density in Estrogen-Deficient Young Women	7	Study Defines Strategy to Protect Bones in Women, Girls With Primary Ovarian Insufficiency	13
23	Rates of Serious Infection after Changes in Regimens for Medical Abortion	11	Abortion Pill Study Suggests Way to Limit Infection	8
24	Prevalence and Repair of Intraoperatively Diagnosed Patent Foramen Ovale and Association With Perioperative Outcomes and Long-term Survival	17	Not Clear Benefit Seen for Incidentally Repairing Patent Foramen Ovale	10
25	A Pooled Analysis of the Effect of Condoms in Preventing HSV-2 Acquisition	12	Condoms Associated With Moderate Protection Against Herpes Simplex Virus 2	10
26	Use of fertility drugs and risk of ovarian cancer: Danish population based cohort study	14	Fertility Drugs and Ovarian Cancer Not Linked, Study Says	9
27	Hormone Therapy and Ovarian Cancer	5	Hormone Therapy Use Associated With Increased Risk of Ovarian Cancer	10
28	High Levels of Circulating VEGFR2+ Bone Marrow -Derived Progenitor Cells Correlate with Metastatic Disease in Patients with Pediatric Solid Malignancies	19	Circulating Blood Cells Are Important Predictors of Cancer Spread in Children	11
29	Parenting stress and psychological functioning among mothers of preschool children with autism and developmental delay	15	Parents of Children With Autism Report High Stress Levels	9
30	Evolution and Survival on Eutherian Sex Chromosomes	7	Male Sex Chromosome on Its Way Out: Study	8
31	Positive and Negative Religious Coping and Well-Being in Women with Breast Cancer	12	Spiritual Outlook Can Affect Mental Health in Breast Cancer	9
32	Prenatal Airborne Polycyclic Aromatic Hydrocarbon Exposure and Child IQ at Age 5 Years	13	Exposure to Common Pollutant in Womb Might Lower IQ	9

33	Exposure to Tobacco on the Internet: Content Analysis of Adolescents' Internet Use	12	Internet May Be Newest Venue for Teen Tobacco Exposure	8
34	Phosphorus and Potassium Content of Enhanced Meat and Poultry Products: Implications for Patients Who Receive Dialysis	16	Fresh-Meat Additives May Be Dangerous for Kidney Patients	8
35	Repeated measures of serum glucose and insulin in relation to postmenopausal breast cancer	13	Einstein Scientists Link Elevated Insulin to Increased Breast Cancer Risk	10
36	When to Start Antiretroviral Therapy in Resource-Limited Settings	8	Treatment For HIV In South Africa Would Be More Effective If Started Earlier	13
37	Peginterferon Alfa-2b or Alfa-2a with Ribavirin for Treatment of Hepatitis C Infection	12	Top Hepatitis C Treatments Equally Effective	6
38	Surgical Mask vs N95 Respirator for Preventing Influenza Among Health Care Workers	12	Surgical Masks Non-Inferior to N95 Respirators for Preventing Influenza Among Health Care Workers	13
39	Exposure to Fine Particulate Matter and Acute Effects on Blood Pressure: Effect Modification by Measures of Obesity and Location	19	Smog Tougher on the Obese	5
40	Critically Ill Patients With 2009 Influenza A(H1N1) Infection in Canada	10	Influenza A (H1N1) Critical Illness Can Occur Rapidly; Predominantly in Young Patients	11

Appendix 4: Distribution of reporting sequences per moves in Med-E-Pops corpus

	Med-E-Pop1	Med-E-Pop2	Med-E-Pop3	Med-E-Pop4	Med-E-Pop5	Med-E-Pop6	Med-E-Pop7	Med-E-Pop8	Med-E-Pop9	Med-E-Pop10	Med-E-Pop11	Med-E-Pop12	Med-E-Pop13	Med-E-Pop14	Med-E-Pop15	Med-E-Pop16	Med-E-Pop17	Med-E-Pop18	Med-E-Pop19	Med-E-Pop20
<i>Direct Speech</i>																				
Introduction									2	4	2			1		1				
Contextualisation								1		3				1				1		
Results																2			2	
Conclusion	3	3	1	3	3	2		3	1	2		2	1			2	3	1		
<i>Reported Speech</i>																				
Introduction							1				1		1		1	1	3		2	1
Contextualisation																	1			
Results														2		2				
Conclusion													2		2	2	4	1	1	2
<i>Communicative Purpose</i>																				
Mitigating potential Med-RAs week points	3				2			4				2			1	2	4		2	
Reinforcing the Med-E-Pops credibility giving voice to researchers		3	1	3	1	2				9	3		4	4	2	8	7	3	3	3
<b>TOTAL N° OF INSTANCES</b>	3	3	1	3	3	2	1	4	3	9	3	2	4	4	3	10	11	3	5	3

	Med-E- Pop21	Med-E- Pop22	Med-E- Pop23	Med-E- Pop24	Med-E- Pop25	Med-E- Pop26	Med-E- Pop27	Med-E- Pop28	Med-E- Pop29	Med-E- Pop30	Med-E- Pop31	Med-E- Pop32	Med-E- Pop33	Med-E- Pop34	Med-E- Pop35	Med-E- Pop36	Med-E- Pop37	Med-E- Pop38	Med-E- Pop39	Med-E- Pop40
<b>Direct Speech</b>																				
Introduction			1	2	2	2	2	2	2			2	1		1			2	2	
Contextualisation		2															1			
Results		1	1	2	2	3	1	2	3	1	1	2	5	0	0	5	3			1
Conclusion	1	1		1	2	2	1	4	3	2		3	2	1	1	2		2	2	1
<b>Reported Speech</b>																				
Introduction		2				2				1				2	1	1	1		1	
Contextualisation		1	1		2							2	2	2					3	
Results	1	1	8	1					2		1	3	3				5		2	
Conclusion		3			2			3	1			1	1		1	4			6	
<b>Communicative Purpose</b>																				
Mitigating potential Med-RAs week points	2	2	10			4	1	1	1			2	1		1					
Reinforcing the Med-E-Pops credibility giving voice to researchers		9		3	4	6		10	10	4		12	14	5	3	7	11	8	16	2
<b>TOTAL N° OF INSTANCES</b>	2	11	10	3	4	10	1	11	11	4	2	13	14	5	4	7	11	8	16	2

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