Lingua, traduzione, didattica
Collana fondata da *Anna Cardinaletti, Fabrizio Frasnedi, Giuliana Garzone*

La collana intende accogliere contributi dedicati alla descrizione e all'analisi dell'italiano e di altre lingue moderne e antiche, secondo l'ampio ventaglio delle teorie linguistiche e con riferimento alle realizzazioni scritte e orali, offrendo così strumenti di lavoro sia agli specialisti del settore sia agli studenti. Nel quadro dello studio teorico dei meccanismi che governano il funzionamento e l'evoluzione delle lingue, la collana riserva ampio spazio ai contributi dedicati all'analisi del testo tradotto, in quanto luogo di contatto e veicolo privilegiato di interferenza. Parallelamente, essa è aperta ad accogliere lavori sui temi relativi alla didattica dell'italiano e delle lingue straniere, nonché alla didattica della traduzione, riportando così i risultati delle indagini descrittive e teoriche a una dimensione di tipo formativo.
La vocazione della collana a coniugare la ricerca teorica e la didattica, inoltre, è solo il versante privilegiato dell'apertura a contributi di tipo applicativo.

Tutti i testi pubblicati nella collana sono sottoposti a un processo di peer review.

COMMUNICATING MEDICINE
POPULARIZING MEDICINE

edited by
Franca Daniele
Giuliana Garzone

FrancoAngeli

Il volume è stato pubblicato con il contributo dell'Università "G. D'Annunzio" di Chieti – Pescara – Dipartimento di Scienze Mediche, Orali e Biotecnologiche.

Ristampa	Anno
0 1 2 3 4 5 6 7 8 9	2016 2017 2018 2019 2020 2021 2022 2023 2024 2025

Stampa: Digital Print Service srl - sede legale: via dell'Annunciata 27, 20121 Milano;
sedi operative: via Torricelli 9, 20090 Segrate (MI) e via Merano 18, 20127 Milano

INDEX

COMMUNICATING MEDICINE POPULARIZING MEDICINE

Franca Daniele
"G. d'Annunzio" University – Chieti-Pescara

Giuliana Garzone
University of Milan

1. Introductory remarks

This Volume is a collection of original chapters on various viewpoints of healthcare communication. In terms of approaches and aspects investigated, the variety of the studies presented in the Volume reflects the diversity of the forms of communication associated with various social practices and registers within the medical field. Scientific medical communication, both inter- and intra-specialistic (Cloître and Shinn 1985) comprises on the one hand genres reporting on scientific medical research in its different branches (from physiology to paediatrics, from cardiology to orthopaedics, from gastroenterology to psychiatry, etc.) involving epidemiological observations and clinical trials, as well as the pharmacological and therapeutic implications; on the other hand, it includes forms of professional communication involving interaction with patients, essentially designed to collect elements to reach a diagnosis and provide indications for treatment; this also results in the re-elaboration of clinical data in technical forms of specialised discourse (clinical records, transcripts, reports, etc.). The need to communicate with patients is a distinctive peculiarity of healthcare discourse, where effective communication is much more important than in many other specialised domains, as doctors have to inform patients about their conditions, introducing important medical notions, and proposing actions for treatment (cf. amongst others, Mishler 1984; Waitzkin 1991; Ainsworth Vaughn 1998; Heritage and Maynard 2006). This is all the more true as in many cases doctors' ability to get their message through effectively is a crucial element in determining the correctness of treatment and patients' compliance. Thus it can be stated that the transmission and dissemination of knowledge in the medical domain is a very serious endeavour, taking place at different levels of specialisation and for a variety of different purposes, from care and treatment to health prevention, from medical training to awareness campaigns.

The diversified character of knowledge and communication in the medical field is reflected in the structure of this Volume. Chapters in the First Section deal with more traditional academic genres (scientific papers published in journals, poster presentations at conferences), with some attention also given to pedagogical issues and pedagogically-oriented texts. The Second Section is devoted to web-mediated forms of health communication, and in particular to websites from which patients can obtain specialist information, counsel or help. If traditionally doctors were the only authoritative repositories of medical wisdom and advice on all aspects of healthcare, today the Internet makes alternative sources available which may be relied on by patients to identify the possible causes for certain symptoms, to learn about prevention or treatment for certain diseases, to find indications for self-diagnosis and self-help, to share views in peer-to-peer exchanges, etc. These practices are surely innovative and may contribute to a more 'democratic' management of medical knowldge, challenging the dominance of health professionals in patient counselling, and somehow altering the traditional bio-medical model of healthcare (cf. e.g. Candlin 2006: 65). However, there are serious reasons to believe that reliance on these 'self-service' forms of medical information and advice may have negative outcomes (cf. e.g. Semigran et al. 2015; Miller 2015). What is interesting from the viewpoint of the linguist and discourse analyst is that the advent of the Internet, and in particular of Web 2.0, has created new spaces for healthcare communication, i.e. new 'communicative ecologies' (Gumperz 1999) which are still largely unexplored.

After this initial overview of the themes investigated in this Volume, the following section will offer a more detailed description of the contents, introducing some of the specific issues discussed in the various chapters.

2. Contents of the Volume

The First Section of the Volume presents studies that investigate more traditional academic genres in medical communication. In the two opening chapters the focus is on specialised medical writing. Franca DANIELE investigates the various kinds of articles published in two of the most authoritative peer-reviewed general medical journals, *The New England Journal of Medicine* and *The Lancet*, and provides a 'dynamic classification' of the different genres included. Findings from the investigation indicate that the genre repertoires of these two Journals fundamentally overlap in the case of research articles, while on the contrary there are variations in the case of non-research papers. The next chapter, authored by Anna Rita TAVANI, looks comparatively at research articles published respectively in Ayurvedic medicine journals and in mainstream medical journals, with a view to verifying if any traits may be found that differentiate the two

types of medical discourses. The analysis compares a corpus of eighty articles published in three journals of Ayurvedic medicine with as many articles published in three important international medical journals over the same time span, and examines the representational choices concerning the sources of medical knowledge and the identity of researching agents. These aspects are explored in light of the literature on interactional metadiscourse, considering in particular the linguistic markers of the pragmatic category of person, and quantitative data on the transitivity system.

Stefania MACI's paper also discusses a 'traditional' written genre in academic medical communication, the conference poster, widely used in medical congresses thanks to its 'logistic' convenience, its relative informality and its ability to offer a chance to create relaxed interaction between the poster author and the audience. Considered for many years "the poor country cousin of papers", posters have now gained in status, being effective in presenting researches and capturing the audience's attention, mostly by relying on visuals as well as on text. It is the latter aspect that is investigated in this paper by means of multimodal analysis, showing how authors rely on the composition plan of the poster layout and take advantage of the different modes involved to represent scientific findings.

In the two chapters that follow the focus is still on 'traditional' medical genres, but shifts to the pedagogical perspective, exploring issues in the teaching of medical English. Renzo MOCINI starts from the observation that academic medical English, like other varieties of ESP, is highly phraseological and draws on a large stock of prefabricated or semi-prefabricated linguistic composites, which are recurrent in the journal article. On this basis, he argues in favour of a phraseological and functional approach to medical language, with the dual purpose of identifying the recurrent lexical patterns typically used to construct medical discourse and showing their usefulness in the teaching of medical English, providing indications for their application. The focus of Barbara CAPPUZZO's paper, instead, is on oral academic communication, and in particular on lectures, with special regards for those delivered by non-native speakers of English, i.e. ELF users. Aiming to identify the peculiarities of the use of English as a lingua franca in comparison with native language, she looks in particular at lexical repetition in academic medical lectures, comparing an ELF academic corpus with a similar corpus consisting of 'native' lectures. Results indicate that repetition is much more frequent (two and a half times) in the ELF corpus than in the native corpus, although there is hardly any difference between the two corpora in the *manner* of lexical repetition. In light of the findings it is concluded that in this case lexical repetition is a deliberate strategy to draw the recipient's attention to specific issues; at the same time it results from compliance with medical discourse-related conventions adopted by specialists to avoid phenomena of referential ambiguity that may prevent successful communication, whatever the linguistic context.

The remaining chapters in the Volume explore aspects of healthcare communication that have been radically affected by the advent of the Internet, as the new medium has made available new options in this field.

One of such option is the online distribution and accessibility of health information, coursebooks, self-help books etc. that can be easily retrieved by any person having a problem or wishing to lead a healthy life.

This is the case examined in Paola LEOTTA's chapter, which sets out to explore the discursive and epistemic structures of popularizing discourse in psychiatry, through the analysis of an online coursebook, with a view to ascertaining how progress in psychiatric knowledge reaches the lay people in the age of Web 2.0. In particular, she analyses the linguistic resources used to support recommendations in psychiatric advice on panic and anxiety disorders. The findings suggest that the function of offering information has the highest frequency, followed by the function of reformulation, which may indicate that the writer is acting as a 'knowledge mediator' transferring knowledge for informative purposes, but in this case also trying to make sure that experts' recommendations are complied with by readers experiencing the problems dealt with.

How health communication is changing in online environments emerges clearly in the following chaper, authored by Marianna Lya ZUMMO, which deals with health forums, i.e. online communities where participants find a space in which they share experiences and feelings according to a 'gather, share and learn' paradigm. This involves a shift in information flow from doctor-to-user to user-to-user that has given rise to worries, because on these forums unmonitored information is provided by users who cannot take responsibility for what they say, and this may have adverse effects on the health of other users. The main objective of the study is the investigation of the participants' visibility and degree of commitment, focusing on authorial stance, that is, the degree of authoritativeness that writers are prepared to invest in their texts to personally support their statements. The results suggest that users are aware of the limitations of their own medical knowledge and may perceive the importance of their suggestions when offering help, limiting the expressions of authorship and certainty.

The exploration of various forms of medical communication on the Internet continues in Anna Franca PLASTINA's chapter, which discusses how the Medicine 2.0 drive for personalized healthcare is shifting the traditional physician-centred model of care towards the questionable patient-centred practice of *apomediation*. Thanks to technological advances, human patients can now engage in a real-time, multimodal dialogue with virtual agents for self-diagnosis. Physicians acting as gatekeepers of medical knowledge and as trusted intermediaries are thus being replaced by these apomediaries for what may seem to be increased patient empowerment. Overall, findings highlight that the apomediated symptom checker is strenuously engaged in a process aiming to affirm its scientific credibility, and therefore gain patient

trust. Apomediation thus appears to subvert mainstream understanding of patient empowerment due to the lack of co-responsibility and co-decision making. Far-reaching consequences of apomediated self-diagnosis can be envisaged to result not only in patient disempowerment, but also, more importantly, in serious risks for patients' health.

The Volume is brought to an end by a study by Kim GREGO and Alessandra VICENTINI which shifts the focus to the use of the Internet by public institutions for health communication purposes. In particular, the two authors look at how in Italy, after the devolution of healthcare services to each of the twenty administrative regions in the course of the 1990s, now local health structures or enterprises (It. transl. *aziende sanitarie locali, Asl*) communicate with an increasingly multi-ethnic population posting information on their websites. The results highlight the presence of only few multilingual documents, especially in English, prevalently translations rather than original texts. In most cases these multilingual texts are linguistically accessible at a basic level, but show significant ambiguities which may often prevent full or partial comprehension. The situation depicted in this study reflects a deeply Italian-centred approach to healthcare communication, in spite of the potential of the Web as a medium to reach a virtually unlimited audience, including the grassroots.

Overall, the studies collected in this Volume outline a picture of healthcare communication as characterized by continuities, as is the case with traditional medical genres, and discontinuities or innovations where the spread of new media has opened up new discursive spaces, and generated new discourses. In the study of the genres that are in continuity with the past, research can zoom in on specific aspects and update results of previous investigations, when exploring innovative forms of communication there is ample scope to break new grounds. Either way, there are many totally new features to be identified and explored, and crucial methodological issues to be verified in order to make sure that the analytical tools deployed are suitable and adequate. Only in this way will it be possible to verify the 'ecological validity' (Cicourel 1987) of research carried out on communication in this very complex and diversified area of scientific and professional activity.

References

Ainsworth Vaughn N. (1998) *Claiming Power in Doctor-Patient Talk.* New York & Oxford: Oxford University Press.

Candlin S. (2006) "Constructing Knowledge, Understanding and Meaning between Patients and Nurses" in Gotti, Maurizio & Françoise Salager-Meyer (eds.). 2006. *Advances in Medical Discourse Analysis: Oral and Written Contexts.* Bern: Peter Lang, pp. 65-86.

Cicourel A. (1987) "The Interpenteration of Communicative Contexts: Examples from Medical Encounters". *Social Psychology Quarterly* 50(2), pp. 217-226.

Cloître M. Shinn T. (1985) “Expository Practice: Social, Cognitive and Epistemological Linkages” in Shinn T. and Whitley R. (Eds.), *Expository Science: Forms and Functions of Popularization*. Dordrecht, Reidel, pp. 31-60.

Gumperz J. (1999) “On Interactional Sociolinguistics Method” in Sarangi S. and Roberts C. (Eds.), *Talk, Work and Institutional Order: Discourse in Medical Mediation and Management Settings*. Berlin, Mouton de Gruyter, pp. 453-471.

Heritage J. and Maynard D.W. (Eds. 2006) *Communication in Medical Care: Interactions between Primary Care Physicians and Patients*. Cambridge, Cambridge University Press.

Miller J. (2015) *Self-Diagnosis on Internet not Always Good Practice*. Harvard Gazette 7/2015. Available at: *http://news.harvard.edu/gazette/story/2015/07/self-diagnosis-on-internet-not-good-practice/* (retrieved 01/31/2016)

Mishler E.G. (1984) *The Discourse of Medicine*: *Dialectics of Medical Interviews*. Norwood, NJ, Ablex.

Semigran H.L., Jeffrey A.L. and Courtney Gidengil A.M. (2015) “Evaluation of Symptom Checkers for Self Diagnosis and Triage: Audit Study”. *British Medical Journal* 351, p. 3480.

Waitzkin H. (1991) *The Politics of Medical Encounters: How Patients and Doctors Deal with Social Problems*. New Haven, CT and London, Yale University Press.

SECTION 1

A DYNAMIC CLASSIFICATION OF MEDICAL GENRES

Franca Daniele
Department of Medical, Oral and Biotechnological Sciences
"G. d'Annunzio" University – Chieti-Pescara

Abstract

In the past few years some research has been devoted to genre in scientific and medical literature. Genre studies have involved mainly the analysis of articles and books. In particular, the basic structure of medical articles has been described as consisting in various sections including: Abstract, Introduction, Material and Methods, Results, Discussion, References. Some authors have included also sections like: Acknowledgments, Key Words, and Address for Correspondence. This chapter provides a 'dynamic classification' of the medical papers published in international scientific literature and particularly in two important journals in the field of medicine: The New England Journal of Medicine and The Lancet. The two Journals fundamentally overlap in terms of research papers instead many differences were found in terms of non-research papers.

Legend

Italic in commas = general classification genres;
Bold = subgenres;
Italic = hypo-genres.

1. Introduction

Currently linguists are concerned with understanding how texts are structured, the framework enclosing them, and have classified and divided text genres in a number of ways, based on different starting assumptions and exposing diverse points of view. A genre in linguistics and language studies is a kind of written or spoken discourse. Swales defines genre as a group of communicative events. Bhatia states that a genre is characterized by its communicative purposes. Miller argues that a genre should be defined primarily on the action it is used to accomplish. Therefore, all three definitions identify genre as a dynamic phenomenon whose focus is on its purpose.

Larson has classified genre according to the communicator's intent in: narrative: telling about a sequence of events; procedural: giving instructions; expository: explaining something; hortatory: encouraging someone; and descriptive; listing characteristics. A medical paper does not fit into any of these genres, most of the time containing portions of each. A medical paper is made up of a number of sections recognized as being functional to that genre and structure. Indeed, in the medical field, the best known paper is the research paper, in which a structure including Introduction-Methods-Results-Discussion (IMRD) has been identified. Although, this way of describing a medical paper is correct, further sections need to be considered, as well as their deep underlying meaning. First, a medical paper includes also items like Title, Subtitle, Authors and the specification of the place where the research had been carried out. Furthermore, each page shows exactly the journal in which it is published, also the Address for Correspondence mainly of the first author, and the Key Words, which are the words most used in the paper. Medical papers also present an Acknowledgements-section that is usually located in the last page just before the References-section. This section serves to acknowledge or thank those who participated in the research only marginally, or who funded the research. Besides the Discussion-section, some journals also require a section for Conclusions, which specifically addresses the conclusions drawn by the authors and all future hopes and expectations concerning that particular field of research. Medical papers that are published in medical journals are not always the result of a research. Moreover, a few journals have been analyzed especially in terms of the genre of the articles they contain. In light of these issues, the indexes and, when necessary, the papers published from January 2000 until December 2009 in two important journals in the field of medicine were analyzed: *The New England Journal of Medicine* (*NEJM*) and *The Lancet*. This study was carried out in the attempt to provide a classification of medical genres, which is indeed lacking in literature. The classification proposed here is a 'dynamic' one meaning that the structural and functional features of the articles published in the two Journals were analyzed jointly. 'Functional' here means that medical papers need to be classified according to their scientific content and action, because these directly affect the structure of the paper itself, to say it in Bhatia's word, their purpose.

First a general classification is proposed, which derives from the observation that the papers belonging in this classification are present in all scientific and medical journals (Figure 1). Such general classification includes a cascade of papers starting from hyper-genres, next super-genres, then super-genres give rise to genres. Hyper-genres are the papers from which all others branch off, since they are the representation of the two main issues included in all medical and scientific journals published worldwide. Similarly, super-genres are papers representing the three main branches of those two main issues. Finally, genres are the most common papers present

in all clinical journals, they represent the model on which all other papers are organized.

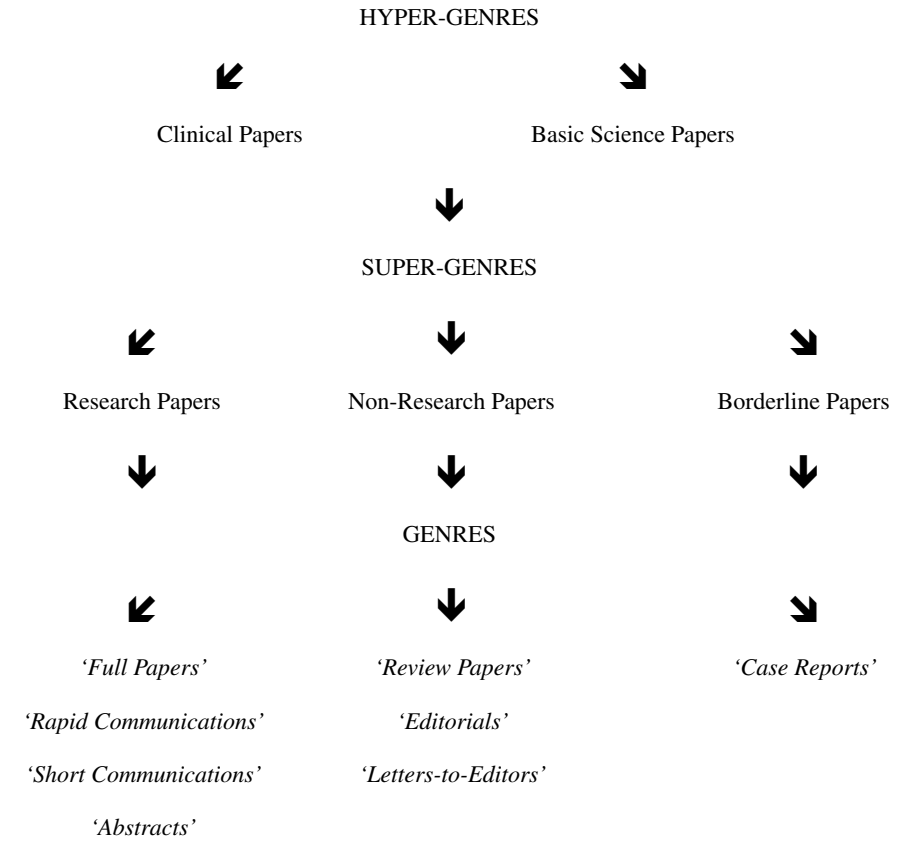
Then a second classification of papers is set, which follows directly the general classification and includes all kinds of papers present in the two Journals studied in this survey. Thus sub-genres were identified, from which hypo-genres derive. Sub-genres are Non-Research Papers whose purpose is different from that of the Non-Research Papers in the general classification, meaning that these kinds of papers are present only in a specific journal, and report issues that are different from the ones reported by genres. Some sub-genres are peculiar types of papers since they represent families of papers with different purposes. Thus sub-genres subdivide into hypo-genres, which deal with the same general issues discussed and evaluated by sub-genres though using different viewpoints and thus having different purposes (Figure 4).

A General Classification of Papers

A classification of medical papers and genres is almost impossible without pointing the attention to the topics they discuss and report on. Understanding of the topics regarding medicine allows linguists to gain insight into the fixed frameworks in which each genre fits, which are a direct consequence of such topics. Indeed, two main fields of research recur in medicine: basic research and clinical research. It is important to spend a few lines about the differences between basic and clinical research. Basic research is concerned with studying the deep biological phenomena starting from *in vitro* studies in the laboratories, passing through animal studies both *in vivo* and *in vitro*. This type of research is preliminary and necessary to clinical research, since new drugs, surgical procedures and diagnostic tools cannot be tried and assessed directly on man. On the other hand, clinical research is concerned with studying disease phenomena occurring in man *in vivo* and is dependent on and follows basic science research. Consistently, all medical journals can be divided into basic science journals and clinical journals, and thus two text hyper-genres can be identified Basic Science Papers and Clinical Papers (Figure 1).

Since the differences or the similarities between these two hyper-genres do not fall within the scope of the present survey because the Journals that are being studied are basically clinical-research oriented, Basic Science Papers will be studied elsewhere, while the hyper-genre Clinical Papers must be further divided into two super-genres: Research Papers and Non-Research Papers. Functionally, a medical journal can contain basically only two types of papers: those that are the result of scientific researches and those that are not. The main difference between these two super-genres is that Research Papers report new, original data that have never been published

Figure 1 – General Classification



previously, while Non-Research Papers discuss already published scientific data. Also, medical journals include a variety of Non-Research Papers that are structurally similar but are functionally very different in terms of their purpose. The former traditionally include the standard Research Paper genres known as: *'Full Papers', 'Rapid Communications', 'Short Communications', 'Abstracts'*, while the latter include: *'Review Papers', 'Editorials',* and *'Letters-to-Editors'*.

Research Papers published in medical journals are usually the result of a medical research, however, medical journals also report other types of researches or surveys in fields that are close to medicine. Thus, although all Research Papers have the same structure as they all report the results of researches, actually, functionally they are different because their purpose is different. All Research Papers, be they basic or clinical, or medical or non-medical have the same structure, which includes sections like: Title, Names

of the Authors, Addresses of the Authors, Abstract, Key Words, Introduction, Material and Methods also called Patients and Methods in Clinical Papers, or simply Methods, also Results, Discussion, Acknowledgements, References, Address for Correspondence of the first author (IMRD) (Table 1). All the sections included in this type of paper closely reflect what occurs during a medical research. The paper is the exact mirror of all the events.

The difference between these Research Papers is functional rather than structural. Indeed, although all of them are the result of a medical research (that is why they are all genres), the main difference between a *'Full Paper'* and a *'Rapid Communication'* is that this latter is usually published in a shorter time as compared to the *'Full Paper'*. On the other hand, a *'Short Communication'* differs from a *'Full Paper'* because of its length. A *'Short Communication'* as the name says is 'short' not because of a different structure or a different frame but because the topic it discusses is specific, so specific that it does not require so much space as a *'Full Paper'*. Abstracts are present in almost all forms of papers and they represent the summary of the paper itself. When published as single papers, *'Abstracts'* are a peculiar medical genre. Structurally they include: Background, Methods, Results and Conclusions, and may report either preliminary data of researches that are not ended yet, or summaries of speeches held in international meetings.

Among Non-Research Papers, *'Review Papers'* represent the result of long work and many years of study in a particular field of medicine. Indeed, they are articles describing 'the state of the art' of a given subject and are made up of a Title, Authors and their addresses, a brief Introduction and then a number of sections describing all the aspects of that subject in medicine; of course they lack the Material and Methods- and the Results-sections. Sometimes a Material and Methods-section may be present describing the survey tools (medline, etc.) the authors have used to search for all the data presented. A particular feature of a *'Review Paper'* is the high number of references and the fact that most of the time it is written by a single author. *'Editorials'* are another type of Non-Research Papers that are usually written by the scientific editors of journals and have the special aim to present 'scientific opinions' supported by scientific evidence. Structurally, *'Editorials'* have a few lines of Introduction, followed by a sequence of paragraphs discussing the issue, then, a few lines of Conclusions and the References. Differently from Research Papers that are generally authored by a team of researchers, both *'Review Papers'* and *'Editorials'* are peculiar, since they are usually written by a single author, and sometimes they are 'invited papers', as the scientific editor of the journal may invite experts in all fields of medicine to write such papers. *'Letters-to-Editors'* are the most ancient form of communication among researchers that have somehow kept this purpose, but today they are also an important control means. Indeed, these actually represent a public debate, in the journal, between any two researchers in any part of the world on any scientific inconsistencies, disagreements, or even mistakes that had

been previously published in the journal itself. This is a way for researchers to check up on one another and debate issues within the scientific community. Structurally *'Letters-to-Editors'* actually include two letters both addressed to the scientific editor of the journal in which the paper under debate had been published. The first poses the question or questions by a researcher-reader of the paper in object, and the second letter is the reply by the researcher or team of researchers who wrote the paper itself. The scientific editor is only a mediator among researchers debating openly on different unclear topics.

There is a third class of papers that is identified in medical journals and it is called *'Case Reports'* which qualifies as Borderline. In other words papers of this kind are neither Research Papers nor Non-Research Papers. *'Case Reports'* are writings mainly by clinicians who show new or uncommon diseases. Structurally they include the following sections: Presentation of a Case, one or more sections of text Body, Conclusions, References. I have classified these papers as being Borderline because they are not the result of a medical research, but at the same time they are not a review of already published scientific data. In other words, although they are not the result of a medical research, they nonetheless present new medical data concerning either known or unknown scientific phenomena. These are special writings reporting new diseases, or already known diseases presenting with peculiar and previously unseen symptoms and manifestations, as well as new ways of either diagnosing or pharmacologically or surgically managing already known disease, thus actually featuring new clinical data rarely seen before.

Table 1 – Basic Structure of Genres

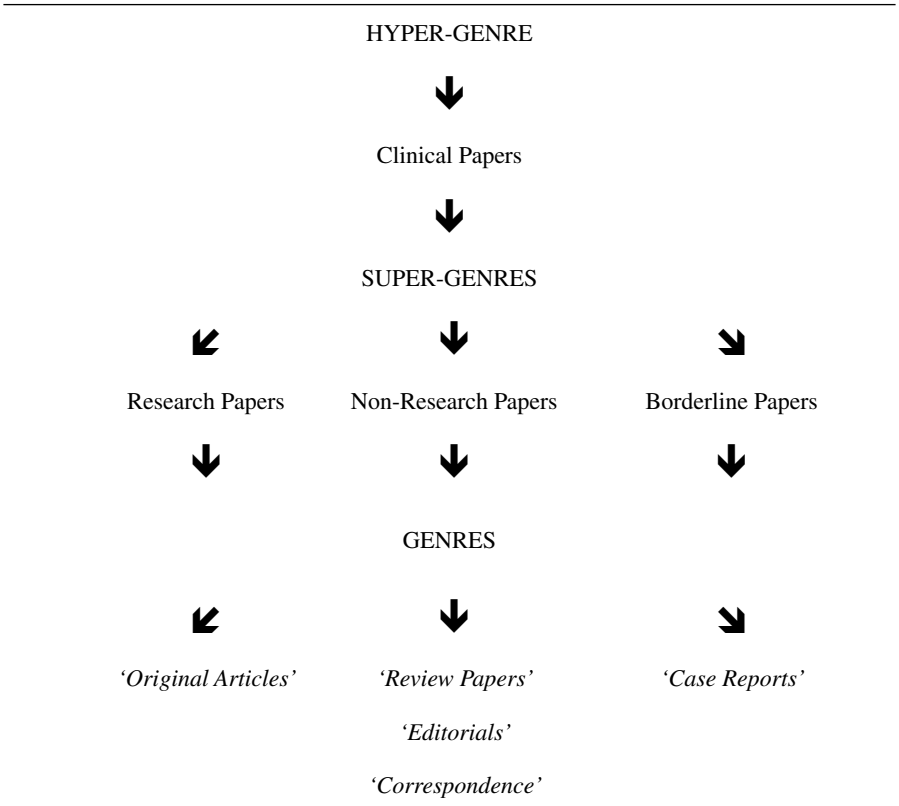
Research papers (IMRD)	*Non-research papers (IBC or TB)*	*Borderline papers*
Title	Title	Title
Authors	Authors	Authors
Abstract	Abstract	Abstract
Introduction	Text Body **either separated or not** into headlined sections	Presentation of Case
Material and Methods	Acknowledgements	Text Body **either separated or not** into headlined sections
Results	References	Acknowledgements
Discussion		References
Acknowledgements		
References		

Legend:
IMRD = introduction-methods-results-discussion;
IBC = introduction-body-conclusions;
TB = title-body

3. Classification of Articles in The New England Journal of Medicine

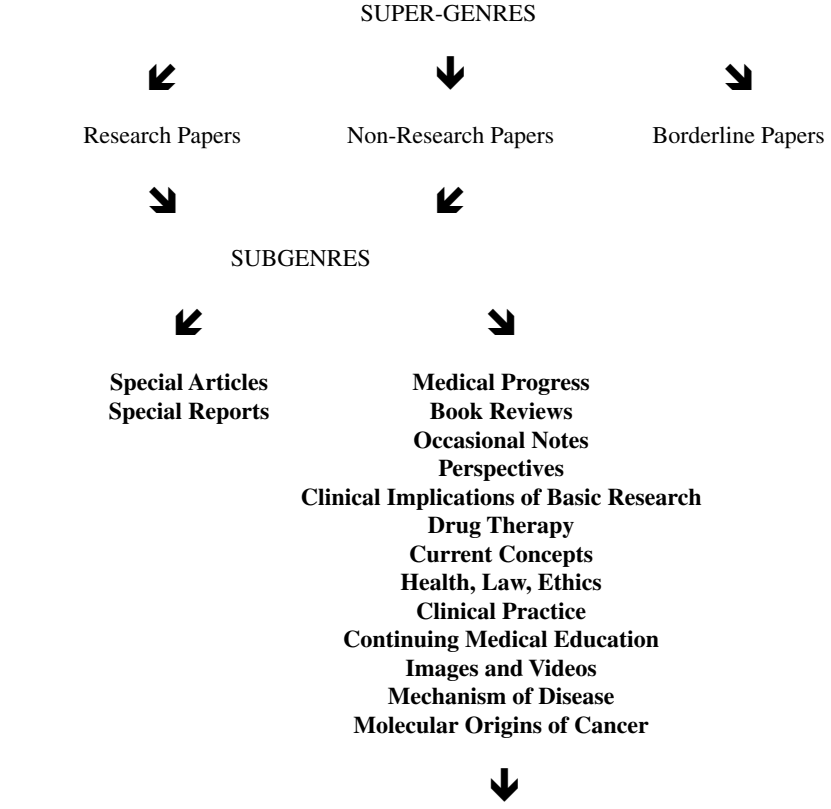
The New England Journal of Medicine (*NEJM*) was established in 1813 and its original name was *The New England Journal of Medicine and Surgery*; in 1928 its present name was introduced. It is published by the Massachusetts Medical Society in the United States. It is a scientific journal mainly concerned with publications in the field of clinical research and medicine, hardly ever including any type of basic science and surgery. It has an impact factor of about 50. *The NEJM* is a peer reviewed Journal written rigorously in English language.

Figure 2 – Papers in The New England Journal of Medicine



Figures 2 and 3 depict all the articles contained in *The NEJM* from January 2000 until December 2009. The analysis of the Journal shows that the Research Papers are named specifically: '*Original Articles'*, **Special Articles**, **Special Reports**. These three types of articles all derive from researches, so they share the traditional IMRD architecture attributed to research papers. '*Original Articles'* can be considered as a genre, since they correspond to the

Figure 3 – Functional Subgenres in The New England Journal of Medicine



'Full Paper' in the general classification. They prevalently present a medical research that has been carried out in the clinical field. Instead, **Special Articles** and **Special Reports** are not genres, they are instead sub-genres because although they are the result of a research and have the same structure as '*Original Articles'*, they are not the result of a medical research. Indeed, **Special Articles** present the results of investigations regarding medical events and issues that have important social implications. On the other hand, **Special Reports** which present surveys carried out throughout countries or states, show the same structural features as '*Original Articles'* and **Special Articles,** but differently from '*Original Articles'* they do not arise from a medical research, and similarly to **Special Reports** they present surveys of medical issues with social and economic fall-outs. The Borderline papers in *The NEJM* are *'Case Reports'* and they are exactly as described in the general classification.

Concerning Non-Research Papers, besides '*Review Papers'*, '*Editorials'*, and '*Letters-to-Editor'* here called '*Correspondence'*, which are the genres belonging in the general classification and that are present also in *The NEJM*, a number of other Non-Research Papers are present, all sharing the basic structure classified as sub-genres (Figure 3).

Book Reviews is a sub-genre not usually contained in all medical journals. These are actually reviews of medical books published around the world, which structurally have a brief Introduction, a text Body and some lines of Conclusions.

Occasional Notes is a sub-genre that appears only at times in the Journal. Indeed it is 'occasional' and describes a variety of topics and subjects that are close to medicine. Structurally it includes besides the Title and the Authors, an Introduction also a series of sections, Epilogue, Acknowledgements, References.

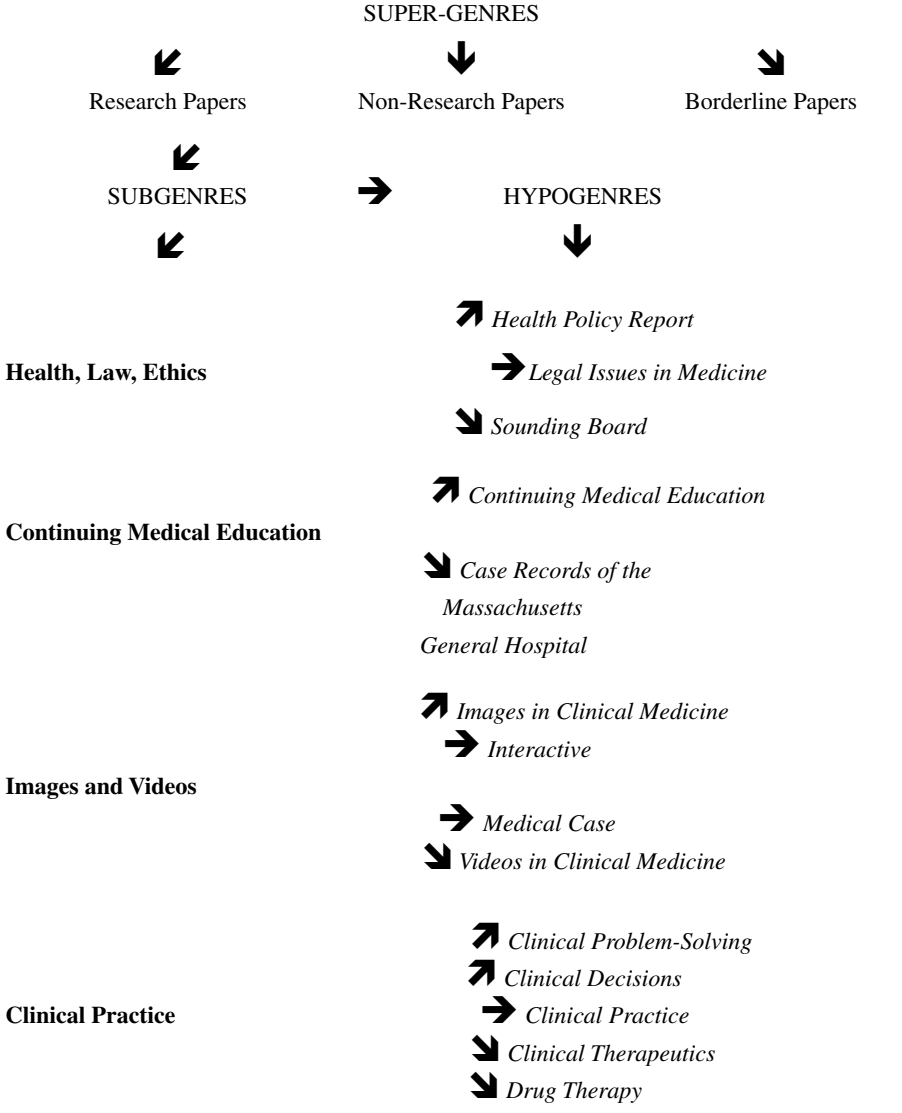
The NEJM has a specific section called **This Week in the Journal** which is a summary of the most important papers contained in the Journal; sometimes such summaries are even accompanied by graphs, tables and pictures. This section contains a peculiar sub-genre called **Perspective**, which is a writing that takes cue from an article that has been published that week in the Journal and authors give their 'own point of view-perspective' on the issue described in the article.

Another sub-genre is called **Clinical Implications of Basic Research**: *The NEJM* is mainly concerned with all clinical aspects of medicine. Nonetheless this genre represents exactly the need to 'take a look' at basic research and explain its importance in clinical research.

Some sections of *The NEJM* are devoted specifically to health, law, ethics and human rights. Thus I identified the sub-genre **Health, Law, Ethics** branching off into three hypo-genres describing these issues, which are *Health Policy Report* and *Legal Issues in Medicine*. The principal difference between these two hypo-genres is that *Legal Issues in Medicine* reports on how medical issues are or should be regulated by ethics and law. On the contrary, *Health Policy Report* describes exactly the opposite, how laws and regulations affect medical and clinical practice in the wider sense. *Sounding Board* is the third hypo-genre; it deals with ethical issues involving daily clinical practice. This type of paper is specific since it is the result of cooperation among doctors, nurses and other health givers.

The NEJM devotes much effort to daily clinical practice so I identified the genre **Clinical Practice** in this study, which includes a number of hypo-genres. *Clinical Problem-Solving* is a hypo-genre reporting information about real patients. Such information is presented in stages to expert clinicians from several specialties who respond to the information, sharing their reasoning with the readers. This hypo-genre starts with the Title and ends with a Commentary by the author and Treatment and Follow-up sections. *Clinical Decisions* is another hypo-genre describing a medical case managed as an

Figure 4 – Functional Hypo-genres in The New England Journal of Medicine



interactive feature designed to assess how readers would manage a clinical problem for which there may be more than one appropriate treatment. This hypo-genre is a two-phase article: in the first phase the clinical problem is presented with the different treatment options; the second phase reports the results obtained by the responses of the readers. *Clinical Practice* is a hypo-genre presenting the medical case through a case vignette highlighting a

common clinical problem. Immediately after a question is posed concerning an emerging or unsolved issue in medicine, the section Clinical Problem follows which describes the problem with different subsections reporting all literature data. Further scientific evidence is reported in the sections Strategies and Evidence, Areas of Uncertainty, and Guidelines. Finally the Conclusions and Recommendations presenting the author's opinions and perspectives appear. Another hypo-genre *Clinical Therapeutics* is specifically dedicated to treatment and drugs. In particular, *Clinical Therapeutics* begins with a case vignette that includes a therapeutic recommendation. A Discussion of the clinical problem and the Mechanism of Benefit of this form of therapy follow. Major Clinical Studies, the Clinical Use of this Therapy, and Potential Adverse Effects are reviewed. Relevant Formal Guidelines, if they exist, are presented. The article ends with the Author's Clinical Recommendations.

Another sub-genre is **Continuing Medical Education**; this gives rise to a number of papers addressing various medical problems and are mainly targeted to post-graduate doctors, interns and residents. The hypo-genre *Continuing Medical Education* is part of the Continuing Education Program of *The NEJM* sponsored by the Massachusetts Medical Society. This is actually a test addressed to doctors on a specific paper published in *The NEJM*. The structure of this hypo-genre includes the Title and the Names of the Authors of the original paper that had been published in *The NEJM*, followed by questions and multiple choice answers. *Case Records of the Massachusetts General Hospital* is another hypo-genre representing a weekly exercise on clinical-pathological issues. This paper starts with a section called Presentation of a Case that consists in showing images like x-rays, and CT scans and also laboratory tests. The second section is called Differential Diagnosis where different specialists are to make a diagnosis according to their special point of view. So both a clinical diagnosis and an anatomical-pathology diagnosis can be posed.

Another important sub-genre I found is **Images and Videos (Internet).** This specific sub-genre gives rise to some very peculiar hypo-genres since these are not traditional papers but rather these are actually pictures and videos that are present especially on the online versions of *The NEJM*. One element that must be highlighted is that some of these hypo-genres like *Images in Clinical Medicine* area one-page paper presenting two pictures of the same case, the traditional "before and after treatment", and the readers are invited to make the diagnosis and offer opinions by e-mail or fax. The authors publish the diagnosis in the Correspondence sections of the journal. *Videos in Clinical Medicine*, and *Interactive Medical Case* are actually not traditionally written papers but are 'images' and 'videos' that are, especially these latter, of course delivered through the Internet. Finally, *The NEJM* devotes a specific section to mistakes in the journal itself.

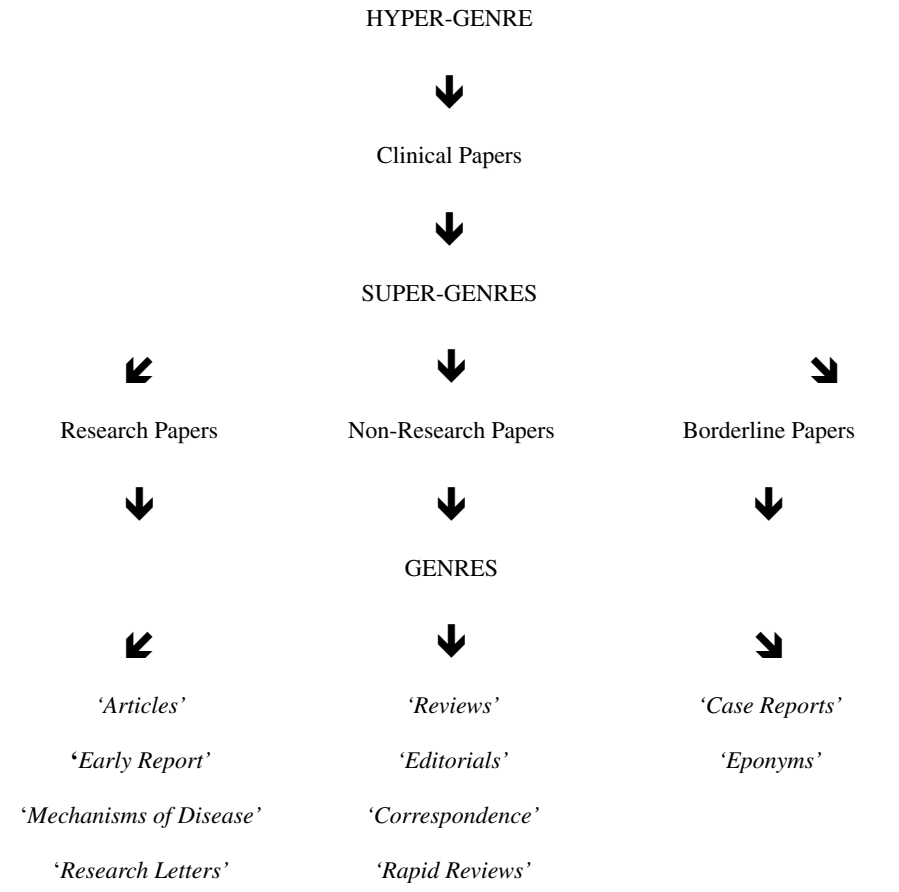
4. Classification of Article Genres in The Lancet

The Lancet was founded in 1823 by the English surgeon Thomas Wakley who derived the name from the surgical instrument called lancet (knife), also after 'lancet arch' that is used to indicate 'the light of wisdom' or 'let in light'. Differently from what the name may mean, *The Lancet* is concerned almost exclusively with medicine, excluding all types of surgery papers. *The Lancet* is a European journal, published by Elsevier in the Netherlands, with an impact factor of about 30.

The Lancet publishes three genres of Research Papers that are named specifically: '*Article*', a genre corresponding to the '*Full Paper*', '*Early Report*' and '*Mechanisms of Disease*', these fit into the classical papers. Their structure starts with a section called Summary which corresponds to the traditional Abstract. Summary is followed by Introduction, then by Methods which in turn includes three sections: Study Population, Study Protocol and Statistical Analysis. Instead in the '*Early Report*' the Summary-section includes Participants, Methods, sometimes called Procedures and finally Statistical Analysis. The Results-section is divided into different paragraphs called Participants, Adverse Events, and others according to the topic. '*Mechanisms of Disease*' is a Research Paper showing a structure that is very similar to the other research papers, only it includes a further section called Glossary. This paper also presents a section called Role of the Funding Source. All these genres have a section called Contributors in which the contribution from the different authors is explained, and a section for the Conflict of Interest statement. Another genre is '*Research Letters*' that looks like the genre '*Abstracts*' in the general classification and reports preliminary data from researches that have not ended yet. The anatomy of this paper includes Title immediately followed by Authors' Names, a long text Body ending with Address for Correspondence. What is strange about '*Research Letters*' is that they actually have all the sections any research paper has, but they are neither named nor separated by specific headlines, thus appearing as a long text Body without separate sections.

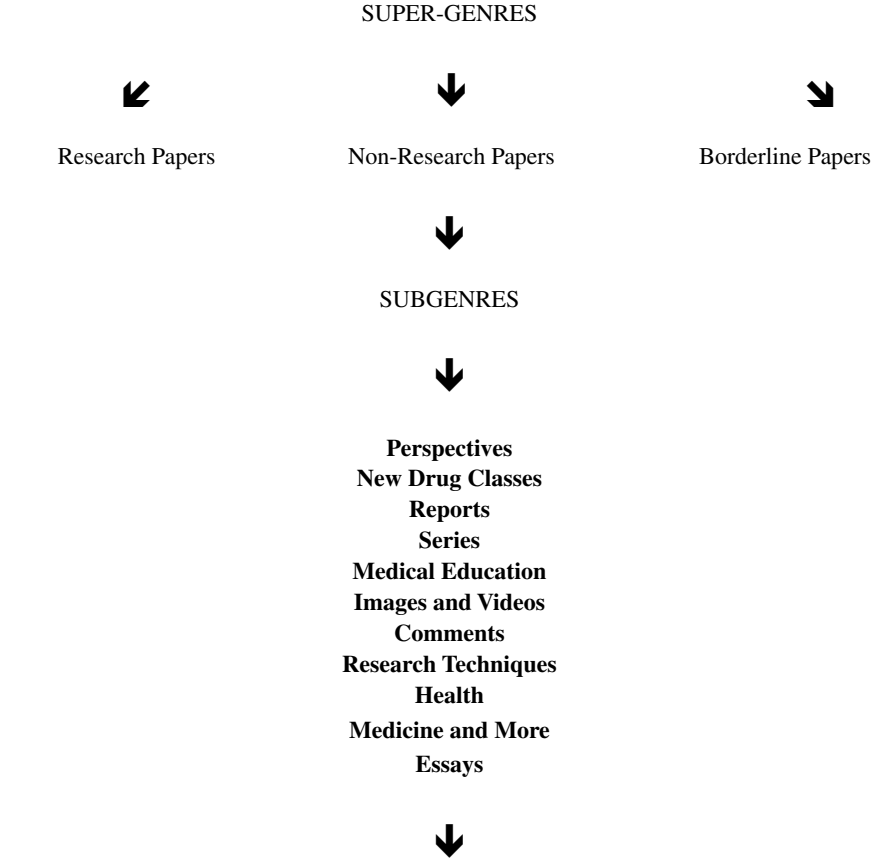
Concerning Non-Research Papers *The Lancet* produces primarily: '*Reviews*', '*Rapid Reviews*', these two latter genres have basically the same structure as the '*Review Papers*' but before the Introduction three other sections appear called: Context, Starting Point, and Where next?. Then the Introduction is illustrated, followed by paragraphs headlined according to the topic, and finally the Acknowledgements and the References appear. The difference between '*Reviews*' and '*Rapid Reviews*' seems to be the topics they deal with. '*Rapid Reviews*' introduce and discuss more specific topics that are consequently shorter and thus take less space. So structurally they are very similar but '*Review Papers*' are much longer. *The Lancet* publishes genres called '*Editorials*' and '*Correspondence*', the former is consistent with the same genre in the general classification, while the latter overlaps with '*Letters-to-Editors*'.

Figure 5 – Papers in The Lancet



The Borderline Papers in *The Lancet* are one-page genres, they start with the Title and the Authors' Names, then a long text Body without sections, followed by Authors' Addresses and References. '*Eponyms*' are more similar to the genre '*Case Reports*' in the general classification. So first the section-Description of the Case appears. However, differently from the genre '*Case Report*', this section is followed by others describing History of the Disease, Diagnostic, Clinical and Therapeutic Aspects of the case, as well as Latest Developments and References. The main difference between '*Case Report*' and '*Eponym*' is that the first is simply a description of a case and the way it had been managed. Instead in '*Eponym*' the case represents only a start in order to provide general information about the disease under discussion, which is usually a disease belonging in a family of diseases (eponym).

Figure 6 – Functional Subgenres in The Lancet



The Lancet publishes such a variety of Non-Research Papers that I classified mainly on the basis of their function since structurally they are all very similar. The sub-genre called **Perspective** actually corresponds to the sub-genre **Book Review** in *The NEJM*. **New Drug Classes** is a sub-genre that *The Lancet* devotes specifically to the presentation of new classes of drugs. This paper has a Title, Author, Abstract, Introduction, followed by paragraphs, each with a specific headline, and then References.

Figure 7 shows the hypo-genres belonging in the sub-genre I classified as **Reports** because these are papers that provide news and information mainly, but not only, about the health and healthcare systems in the world. These are actually short flashes of information that resemble more a magazine article with a Title a text Body and the Author's Name is at the end.

Figure 7 – Functional Hypo-genres in The Lancet

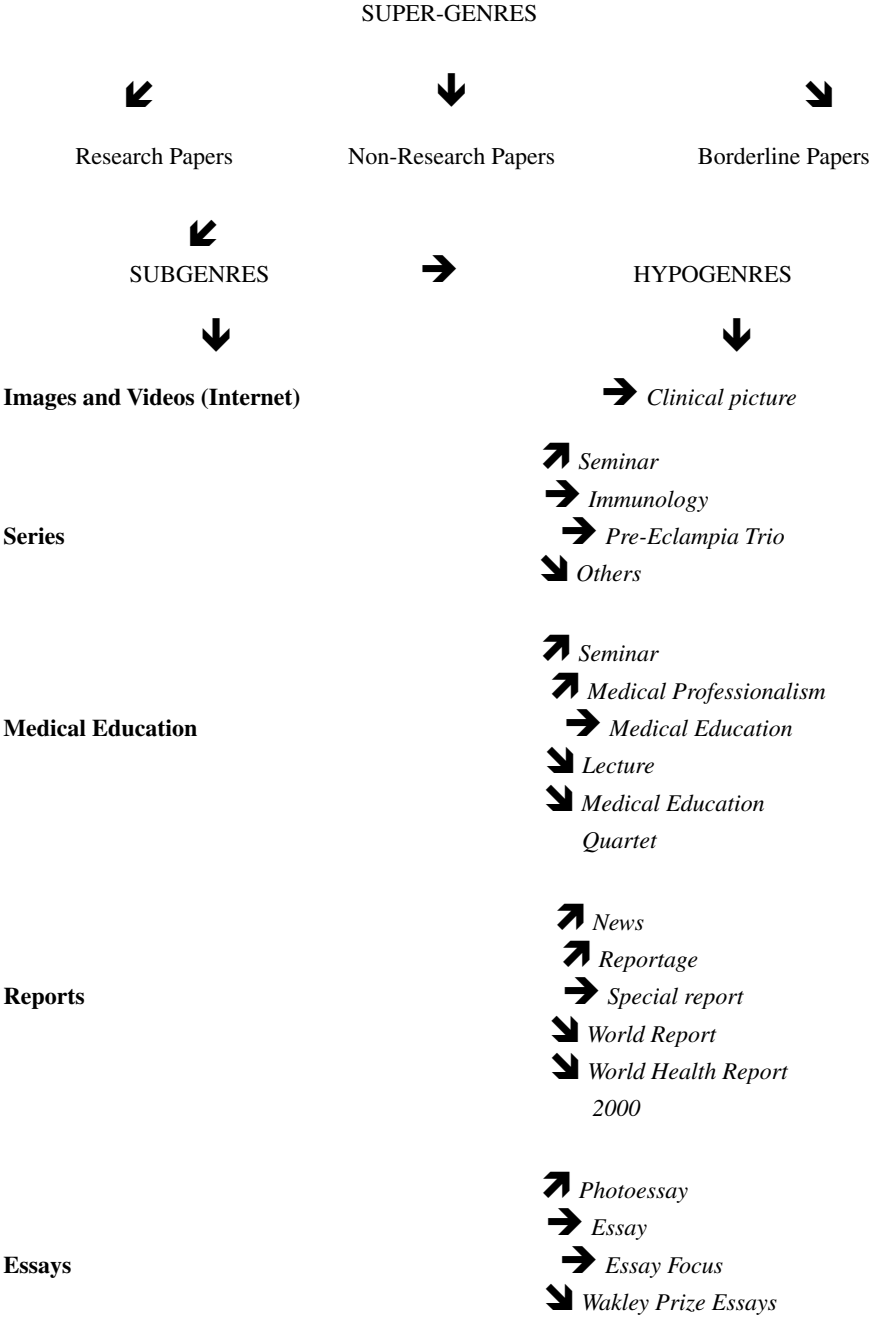


Figure 7 – Functional Hypo-genres in The Lancet (Continued)

Research Techniques	↗ *Interpretative Medicine* → *STROBE Statement* ↘ *Qualitative Research* *Series*
Comments	↗ *Viewpoint* ↗ *Hypothesis* → *Comment* → *Personal Account* ↘ *Commentary* ↘ *Uses of Error*
Health	↗ *Health Policy* ↗ *Public Health* → *Academe and Industry* → *Consensus Statement* → *Health* ↘ *Economic Quintet* ↘ *Health and Human Rights*
Medicine and More	↗ *Medicine and Literature* ↗ *Medicine and Art* → *Others* → *Dissecting Room* ↘ *Various Departments* ↘ *Medicine, Society and Industry*

The sub-genre **Series** that deals with a variety of subjects involving health, medicine, medical research and social issues includes hypo-genres published in sequence, until the whole subject has been fully debated and reported. The hypo-genre *Clinical Picture* is actually a picture of some alteration representing a specific disease, the picture is accompanied by the explanation of the disease depicted. This paragraph of explanations is followed by the doctors' names submitting the picture and their affiliation.

The hypo-genres in **Medical Education** include *Medical Education Quartet*, which is a series of four papers dealing with medical curricula.

While, *Medical Professionalism* is a report of various experiences medical-school students and trainees undergo while training to become doctors. *Lecture* is actually a written lesson on different issues involving health and diseases. All these hypo-genres have a Title followed by the Author's Name and Abstract, then an Introduction and various sections ending with the References.

The sub-genre I called **Health** includes papers dealing with matters concerning health, politics, social and economic aspects of medicine. Structurally, all these papers share an architecture that starts with the Title followed by the Authors' Names, then paragraphs with specific headlines and References. This structure is also shared by the sub-genre I called **Medicine and More**. This includes papers exploring the relation between medicine and other disciplines like art, ethics, statistics, etc. Instead the hypo-genre *Dissecting Room* is mainly a one-page paper with only a Title and a long text Body.

The Lancet dedicates a specific set of papers addressing problems related to research and research methods. Figure 7 shows the sub-genre I called **Research Techniques** sharing the structure: Title, Author, Introduction, sections with headlines and References. This same structure is also present in the hypo-genres called *Viewpoint* and *Hypothesis*. Instead, the other hypo-genres in the **Comments** have only a Title and Author and long text Body with some References. This group of papers actually reports personal ideas and accounts on different subjects and issues involving health and medicine. A common architecture can be found also in another group of hypo-genres I called **Essays**. **Essays** describe experiences and opinions of various researchers and doctors reporting on a variety of subjects involving all aspects of medicine and health. *The Lancet* finally reserves specific sections to evidencing the mistakes that have been made in previous articles published in *The Lancet* itself, and also a specific section for obituaries.

5. The New England Journal of Medicine vs. The Lancet

Both *The New England Journal of Medicine* and *The Lancet* are excellent journals dealing mainly with medical problems. *The NEJM* is American and thus it is also concerned with health and healthcare in the USA, differently from *The Lancet* which instead is European and so it is somewhat closer to issues involving all European countries.

In terms of hyper-genres both Journals publish almost exclusively Clinical Papers that may be either Research or Non-Research Papers. Both Journals substantially share all the genres belonging in the super-genre: Research Papers. Indeed all the genres examined although having different names and showing some slight structural differences, they all share the IMRD scheme, and functionally they are all exactly the same, in other words, they all

report the results of medical researches. *The NEJM* also publishes two other Research Papers that are functionally different from the genres, as they do not report a medical research but other types of surveys involving health, and for this reason I classified them as being sub-genres. In terms of Borderline Papers they both present '*Case Reports*' and *The Lancet* also '*Eponyms*', which is fundamentally the same as '*Case Reports'* with only very slight structural differences.

The real differences between the two Journals may be evidenced when evaluating Non-Research Papers. Both *The NEJM* and *The Lancet* publish papers corresponding to my general classification of genres. Indeed, they both publish '*Review Papers*', '*Editorials*' and '*Correspondence*'. In addition *The Lancet* publishes also '*Rapid Reviews*' which are structurally and functionally exactly like '*Review Papers*' only they are shorter because they report extremely specific subjects. Both *The NEJM* and *The Lancet* have sub- and hypo-genres dedicated to health, society, politics, ethics, etc. However, they publish some papers that are functionally different independently of their specific nomenclature. First, *The NEJM* publishes a family of papers called **Special Reports** (sub-genre); this same nomenclature is used by *The Lancet* to present instead a hypo-genre introducing news concerning general issues involving medicine and belonging in the family called **Reports** (sub-genre). Moreover, regarding research techniques and methodologies, *The Lancet* dedicates a number of hypo-genres to this specific subject which I classified as *Research Techniques*, while *The NEJM* has one sub-genre and no hypo-genres dealing with this subject: **Clinical Implications in Research**. *The Lancet* devotes only one paper to drugs and pharmacological treatment through its sub-genre called **New Drug Classes**. *The Lancet* dedicates a number of hypo-genres to the relations between medicine and literature and arts in general, so it seems to be more oriented toward involving the readers in general knowledge. *The NEJM* seems more targeted towards medical training and updating; indeed, differently from *The Lancet*, it publishes three sub-genres and a number of hypo-genres specifically addressing continuing medical education and a number of papers reporting medical and clinical problem solving. For example, *The NEJM* publishes the sub-genre called **Images in Clinical Medicine** which is very different from the hypo-genre *Clinical Pictures* published in *The Lancet* since this latter is only the description of a picture depicting a disease, while the former is actually a test for the readers who are invited to pose a diagnosis based on the picture and the explanation of the case. Furthermore, *The NEJM* publishes on line dedicated videos.

6. Conclusions

Linguistic and genre studies have been precious for providing data concerning the different genres that characterize medical literature. The

traditional all ever accepted medical research paper made up by Introduction, Methods, Results, Discussion and References is often taken for granted. However if this structure is certainly true for, what I called Research Papers, it does not actually apply to most of the genres I found in the present survey. The architecture of a paper is always the result of the topics and of the medical subjects it reports and discusses. Ten (10) years of publications in these two Journals were considered and the similarities among genres were identified, independently of the different denominations actually given to them. The analysis yielded a 'functional classification' of the genres examined on the basis of their function, purpose and on the issues they discuss, so also hyper-genres, super-genres, sub-genres and hypo-genres were set. I must say that my initial 'functional' classification seems to be fully confirmed by the data obtained in the present analysis. First, a distinction must be made between Basic Science Papers and Clinical Papers. Then, a further subdivision must be done into Research Papers, Non-Research Papers and Borderline Papers. Finally, these branch off into all the different genres, sub-genres and hypo-genres that were identified in the present survey. Clearly both Journals have genres including issues like politics, health, medical education, etc. Indeed *The NEJM* has extensive parts dedicated to clinical reasoning, clinical testing, and clinical training. On the contrary, *The Lancet* prefers to feature sections addressing arts and literature.

For both Journals I also attempted to provide a 'structural' classification of the various articles, i.e. the relationship between their structures and function, which is in turn related to the topics they describe. It seems quite clear that a certain structure corresponds to specific needs to which the writing must respond, and that in terms of structure, a clear differentiation can be made only between Research and Non-Research Papers. Table 1 depicts the three main structures identified. The first is specific for Research Papers and it includes Introduction-Methods-Results-Discussion (IMRD). The second and third structures are Introduction-Body-Conclusions (IBC) and Title-Body (TB), with or without headlines and References-section. The two latter structures model all Non-Research Papers, which are all similar independently of the subjects and topics investigated, e.g. they lack the Methods and Results-sections since they do not result from researches. Some sub- hypo-genres lack even References as they present only personal accounts and ideas.

A third element that must be considered is the 'target reader'. Obviously, the present survey involved highly specialized Journals that publish highly specialized researches targeted to specialists and researchers in the various areas of medicine. However, these Journals seem to be quite eclectic since they contain specific sub-, hypo-genres that cover legal, social, economic, religious and ethical aspects of medicine. Both Journals present specific sub-, hypo-genres targeted toward medical trainees. Indeed *The NEJM* is more medical-education medical-trainee oriented in terms of target

readers as compared to *The Lancet*, which publishes on a variety of issues surrounding medicine and that might interest the specific community of readers the Journal is addressed to.

The present survey adds new and important insight to the traditional way of viewing medical papers and the rigid framework they had been fit into. The data showed here represent an excellent start for understanding that medical papers are not simply a set of sections that recur with the exact same structure and architecture, instead the structure serves to describe specific and complex purposes resulting in writings that are primarily a means of communication within a specific language community.

Acknowledgements

Thanks are due to Lucilla Pasquini and Silvia Magri for their precious librarian help in collecting the papers.

References

Bhatia V.K. (1993) *Analysing Genre and Language Use in Professional Settings*. Longman, London.

Bondi M. (1999) *English Across Genres*. Il Fiorino, Modena.

Bruti S. (2005) "Paraphrase Across Academic Genres: Examples from Textbooks and Lectures" in Bondi M. and Maxwell N., *Cross Cultural Encounters: Linguistic Perspectives*. Officina, Roma, pp. 68-80.

Gesuato S. (2006) "Course Descriptions: Communicative Practices of an Institutional Genre" in Caliendo G. et al., *Genres on the Move. Hybridization and Discourse Change in Specialized Communication*. Edizioni Scientifiche Italiane, Napoli, pp. 221-241.

Gesuato S. (2008) "Calls for Abstracts: a Genre Shaping Professional Practices" in Hernàndez P. Et al. (Eds.), *Researching and Teaching Specialized Language: New Contexts New Challenges*. Universidad de Murcia, Murcia (Spain), pp. 60-71.

Gesuato S. (2008) "Encoding of Information in Titles: Academic Practices Across Four Genres in Linguistics in Aa.Vv." in Chris Taylor (Eds.), *Ecolingua: the Role of E-Corpora in Translation and Language Learning*. EUT, Trieste, pp. 325-248.

Gotti M. and Bhatia V. (2006) *Explorations in Specialized Genres*. Peter Lang, Bern.

Larson M.L. (1984) "Meaning-Based Translation: A Guide to Cross-Language Equivalent" in Lanham M.D. and Miller C.R., *Genre as social action*. University Press of America, *Quarterly Journal of Speech* 70, 151-167.

Webber P., Snelgrove H. and Mungra P. (2007) "The Use of Modality in Different Medical Text Genres" in Gotti M. and Dossena M., *Modality in Specialized Texts*. Peter Lang, Bern, pp. 399-415.

Swales J.M. (1990) "The Concept of Genre" in *Genre Analysis: English in Academic and Research Setting*. Cambridge University Press, Cambridge.

«*The Lancet*» January 2000-December 2009.

«*The New England Journal of Medicine*» January 2000-December 2009.

STRATEGIES OF SELF MENTION IN TRADITIONAL INDIAN MEDICAL DISCOURSE

Annarita Tavani

Abstract

This research aims to study self-reference (Hyland 2005; 2012) in research articles on a number of medical issues tackled from a traditional Indian medicine perspective. The corpus consists of articles published by a number of online journals of Ayurvedic medicine, which are scanned in search of quantitative data on the handling of the pragmalinguistic category of person (Benveniste 1966). The corpus is analyzed against a control-corpus made up of research articles published by conventional Western medicine journals, integrating a fundamentally quantitative approach (Sinclair 1991. Stubbs 1996. Tognini-Bonelli 2001) with an indispensable qualitative reading of research results. The adoption of a discourse analytical perspective rooted in Halliday's functional-systemic grammar (Halliday/Matthiessen 2004) has allowed verification of the underlying research question, which focuses on metadiscursive strategies of self-mention (Hyland 2005) in traditional Indian medicine papers. A study of the first person singular and plural ("exclusive we") in both corpora is coupled with a study of third-person self-reference and of the concordances of the type "Ayurveda" in the Indian corpus with a view to analyzing representational strategies and the attribution of scientific responsibility. The handling of voice also comes under careful scrutiny in light of its impact on the construal of agency and on the impersonal quality typically attached to scientific research (Gotti 2003; 2008).

1. Introduction

This is a corpus-based research examining traditional Indian medicine discourse with a view to studying the handling of self reference and the construction of authorial identity. The corpus consists of eighty articles published both in print and online by three journals of Ayurvedic medicine[1]

1. *Int J Ayu Pharm Chem; Journal of Ayurveda & Integrative Medicine; AYU*.

from 2013 to 2015. This corpus is scanned in search of linguistic markers of the pragmatic category of person (Benveniste 1966) and of quantitative data on the transitive system underlying the research articles (Halliday/Matthiessen 2004). In particular, the functional-systemic perspective developed by Michael Halliday is applied to the analysis of metadiscursive strategies of authorial self mention. Representational choices concerning the source of medical knowledge and the identity of researching agents are explored in light of the literature on interactional metadiscourse within the academic community (Hyland 2002, 2012; Gotti 2009). The corpus under analysis – a small-sized one of 208,341 tokens and 14,900 types – has been processed automatically against a control-corpus consisting of eighty research articles issued by three international journals of medical science[2] over the same time span (288,655 tokens; 16,322 types).

The adoption of a quantitative approach to corpus study has combined with a qualitative close reading of texts on the strength of the assumption that no discourse analytical perspective aiming to shed light on textual as well as contextual phenomena can do without a sound interpretative effort. Automated querying of corpora has relied on the use of open source software (Antconc 2014) for the extraction of wordlists, concordances and keyword lists. The verification tools made available by corpus linguistics (Sinclair 1991; Stubbs 1996; Tognini-Bonelli 2001) have been the basis for this study of medical discourse, which combines a corpus-based with a corpus-driven approach. As a matter of fact, a perusal of keyword lists has preceded the analysis of microlinguistic features connected with the representation of authorial identity. Thus quantitative data have acted as a driver for research, helping to shape the research question, which has in turn provided the basis for further corpus study aiming to verify the hypothesis underlying this chapter: does medical research rooted in traditional Ayurveda share metadiscursive strategies for the representation of self with conventional Western medicine, or do the cultural and disciplinary peculiarities of the two medical approaches affect the handling of metadiscourse in the relevant academic communities, which consequently deploy different resources in their varying attempts to attribute scientific responsibility to either medical researchers or the tradition of integrative medicine and its time-honoured source? Put in Maingueneau's terms, the research question can be reworded as follows: does the discourse of Indian Ayurveda[3] qualify as a self-constituting discourse or "discours constituent" (Maingueneau/Cossutta 1995), that is to say, as a discourse which proceeds from an authoritative source, one that stands in no need of any ethos-building construction (Hyland 2005) as it

2. *International Journal of Medical Science; European Journal of Medical Research; American Journal of Medical and Biological Research.*

3. Ayur=long life; veda=revealed knowledge.

inherently generates its own ethic representation? Maingueneauthusdefines self-constitutingdiscourses (1995: 112):

> […] il nous a paru nécessaire de donner, au sein de la production énonciative d'une société, un statut spécifique à des types de discours qui prétendent à un rôle que, pour faire vite, on peut dire fondateur et que nous appelons constituants. Délimiter un tel ensemble, c'est faire l'hypothèse que ces discours partagent un certain nombre de contraintes quant à leurs conditions d'émergence et de fonctionnement. […] La prétention attachée au statut de discours constituant, c'est de fonder et de n'être pas fondé.

The discourse of integrative Indian medicine may prove to be represented as originating with an indisputable authority grounded on a well established tradition which would confer on it the status of a self-constituting discourse, i. e. a discourse which founds itself in that it emanates from a highly reverenced wisdom handed down from generation to generation within Eastern settings. The mention of 'Ayurveda' as a form of 3rd person self reference would identify research authors with an extremely authoritative source of medical knowledge, thus validating the hypothesis that the discourse of integrative Indian medicine be a self-constituting discourse. Conversely, medical research embedded in traditional Indian settings may prove to construe authorial identity in a way that is not dissimilar from strategies of self mention adopted in research articles stemming from conventional Western medicine.

The next section introduces an examination of keyword lists extracted from the two corpora with a view to discerning lexical/thematic polarizations in the two sets of texts which may affect the construal of authorial identity. In section 3 the focus shifts to a study of the interactional resources of self mention (Hyland 2005) deployed in integrative and conventional medicine articles respectively. Those resources, connected with the choice of either third or first person forms, are explored through a routine interrogation of both corpus and control-corpus aiming to ascertain the degree of explicitness of author presence in the texts under analysis. Finally, the handling of voice is examined in its impact on the personalization/depersonalization of the agents of research and on the attribution of scientific responsibility. In both the corpus-driven and the corpus-based steps of the study, quantitative data are checked against intuitions rooted in qualitative analysis.

2. Keywords

A cursory look at the keyword list extracted from the corpus of Indian research articles shows interesting lexical preferences in both corpus and control-corpus. Here follow the first forty hits in the list:

Table 1 – Keywords in Indian medicine research articles (Indian corpus)

Rank	*Frequency*	*Keyness*	*Keyword*
1	433	752.905	ayurveda
2	296	514.688	ayurvedic
3	241	398.044	india
4	454	339.517	drug
5	289	284.467	drugs
6	242	281.959	improvement
7	160	278.210	vata
8	136	210.789	relief
9	130	200.623	signifi
10	114	198.225	pitta
11	114	198.225	prakriti
12	238	192.906	extract
13	109	189.530	rasa
14	921	189.420	it
15	192	184.894	trial
16	106	184.314	kapha
17	116	183.599	tablets
18	303	175.623	pain
19	178	173.295	having
20	259	170.462	water
21	103	168.905	gum
22	97	168.665	tablet
23	91	158.232	rasayana
24	91	158.232	yoga
25	101	158.066	cant
26	113	155.465	placebo
27	95	155.156	fi
28	86	149.538	churna
29	85	147.799	okara
30	265	145.395	wound
31	81	140.844	bt
32	78	135.627	aaefc
33	78	135.627	integrative
34	78	135.627	linn
35	78	135.627	sanctum
36	76	132.150	ayu
37	76	132.150	bhasma
38	97	129.426	students
39	151	127.689	plant
40	72	125.194	fruit

As expected, the word 'Ayurveda' is first in the keyword list, followed by the hits 'Ayurvedic', 'India', 'drug*' and 'improvement', whose prominence (keyness values: 281.959) is matched by that of the noun 'relief' (keyness values: 210.789), both items being suggestive of either objective or subjective conditions of well-being, possibly achieved through Ayurvedic remedies. The adjective 'integrative' features 33rd in the list, carrying a keyness of 135.627, preceded and followed by a number of nouns referring to a variety of officinal plants (the word 'plant' itself is charged with a keyness of 127.689). Scrolling down the keyword list, two further nouns appear to reveal some thematic peculiarities of the discourse of Ayurveda, namely 'students' (keyness value: 129.426) and 'reliability' (keyness value: 114.636). As to the former, here follow ten random concordances extracted for the word:

Concordance 1, 'students' in Indian corpus

1	experimental group of graduate	students	to the integrative instructional
2	methods. The control group of	students	received the instructions in a
3	over thereafter shows that	students	find integrative approaches
4	included interns, postgraduate	students	and teachers from more than
5	This in fact, poses a threat:	Students	go for rote learning
6	the experimental group of	students	was subjected to a well planned
7	the experimental group of	students	was exposed to CSL, which is
8	discussion in which the	students	were split into small groups and
9	was defined in terms of the	students	who were registered in the first
10	Sampling and randomization	Students	of both the academic years were

The hypothesis suggested by the positive keyness of the word 'students' is that the community of practice of Indian medical researchers may have developed a finer sensitivity for educational issues than its Western counterpart. This hypothesis appears to be validated by a look at the texts in which the item 'students' occurs. Here follows an example:

(1) In the first two experiments, we subjected the experimental group of graduate *students* to the integrative instructional methods. The control group of *students* received the instructions in a conventional, didactic, teacher-centric way. After the experiments were over, the learning outcome was assessed and compared on the basis of the test scores. The groups were crossed over thereafter and the instructional methods were interchanged. Finally, feedback was obtained on different questionnaires. In the third experiment, only *student* feedback was taken as we could not have a control group. […] The *students* were first introduced to an imaginary clinical case scenario. A brief history of the patient, symptoms, and investigation reports were provided, and thereafter, the physiology was described in a conventional manner. At the end

of the lecture, the case was taken up once again and the *students* were asked to solve the mystery of the case. Based on the student responses, the explanations on physiological aspects were provided. Thus, the *students* went through the normal physiology, also being simultaneously exposed to the application aspect. Two power point presentations were prepared: One for the control group and the other for the experimental group. The control group of *students* received the information in a conventional way in which the clinical problem was not discussed, though the integrative explanations were offered. Box-3 shows the subject content that was covered for two groups of the *students* [my italics].
(Himas Nshu Joshi / Girish Singh / Kishor Patwardhan 2013).

A close reading of the excerpt provides a clue to the prominence enjoyed by the lexical item under analysis, which clearly plays a central thematic role in the research reported in this article, whose title is extremely revealing of both study area and research purpose: "Ayurveda education: Evaluating the integrative approaches of teaching Kriya Sharira (Ayurveda physiology)". Other occurrences of the noun 'students', whose total frequency in the corpus equals 0.05%, are amenable to the function of reporting the inclusion of students into either study groups or control groups in the course of medical researches.

Finally, the noun 'reliability' conjures up an argumentative scenario in which integrative medicine strives hard to achieve the indisputable status of experimental science. Again, a look at concordances seems to confirm this impression:

Concordance 2, 'reliability' in Indian corpus

1	integrative method of teaching.	Reliability	and consistency of the
2	of each experiment. A	reliability	test in the form of
3	Though we conducted this	reliability	test after obtaining the
4	REVIEW ARTICLE	Reliability	studies of diagnostic
5	is an assessment of the	reliability	diagnoses and treatment.
6	of diagnoses and treatment.	Reliability	is a quantitative measure
7	of clinical studies. Several	reliability	studies are conducted in
8	The investigation of the	reliability	of traditional Chinese,
9	formative stage. However,	reliability	studies in Ayurveda are in
10	relevant concepts of	reliability	studies of diagnostic

The impression is further confirmed by a close reading of a longer excerpt from one of these texts:

(2) Recently, a need to develop supportive new scientific evidence for contemporary

> Ayurveda has emerged. One of the research objectives is an assessment of the *reliability* of diagnoses and treatment. *Reliability* is a quantitative measure of consistency. It is a crucial issue in classification (such as prakriti classification), method development (pulse diagnosis), quality assurance for diagnosis and treatment and in the conduct of clinical studies. Several *reliability* studies are conducted in western medicine. The investigation of the *reliability* of traditional Chinese, Japanese and Sasang medicine diagnoses is in the formative stage. However, *reliability* studies in Ayurveda are in the preliminary stage. In this paper, examples are provided to illustrate relevant concepts of *reliability* studies of diagnostic methods and their implication in practice, education, and training. An introduction to *reliability* estimates and different study designs and statistical analysis is given for future studies in Ayurveda [my italics].
> (Kurande Vrinda Hitendra / Waagepetersen Rasmus / Toft Egon / Prasad Ramjee 2013).

The need to establish Ayurveda as a medical science and practice rooted in the experimental method for research, one in which the replicability of results is guaranteed by an accurate study of procedures and outcomes, is answered by the argument that the study will tackle the question of reliability estimates in an attempt to provide scientific evidence for contemporary Ayurveda and the efficacy of Ayurvedic diagnoses and treatments. Thus the problem is posed and solved through an inductive-factual approach.

A glance at the keyword list extracted for the Western corpus provides an interesting insight into a metadiscursive feature of the texts under investigation, namely person and self mention. As a matter of fact, the possessive adjective 'our' carries a keyness value of 138.971. Coupled with the keyness of the 1st person plural pronouns 'we' (48.527) and 'us' (37.405), it suggests a crucial role played by 1st person self mention in the control corpus. This area of interactional metadiscourse is explored in the next section.

3. The handling of person in the construction of scientific identity

A comparison of frequency values for 1st person plural forms (0.15% in the corpus of Indian articles and 0.32% in the control-corpus of conventional medicine articles) reveals meaningful peculiarities in the degree of explicit author presence characterizing the two corpora. As shown by concordance lines, it is an exclusive 'we' (Wilson 1990) functioning as a metadiscursive resource for self reference in that it refers to the researchers with whom the studies originate. The adoption of the plural form is amenable in both corpora to the plural authorship of scientific research articles, which is the case with all texts with the exception of two articles published by the *Journal of Ayurveda and Integrative Medicine*, of which one is a theoretical study by

an independent researcher[4], while the other[5] is an editorial and consequently originates with an individual author voicing his authoritative opinion on a crucial question which he feels needs supportive argumentation, namely the role played by contemporary Ayurveda in the diagnosis and treatment of medical conditions and in the multi-faceted arena of theoretical and clinical approaches to research and practice within the community of medical scientists.

The plural authorship of all research articles in the Western corpus accounts for the absence of 1st person singular forms, while justifying the lavish use of 1st person plural forms. Yet, the preference shown in the Western corpus for these forms is not wholly amenable to plural authorship as this feature is largely shared by the two corpora. Rather, diverging metadiscursive strategies may emerge from a closer examination of the resources of self mention deployed in conventional and traditional medicine articles.

As regards 3rd person reference, the keyness attached in the Indian corpus to 'Ayurveda' (725.905) may be suggestive of a higher degree of impersonality in the representation of author identity. Yet, a perusal of concordances shows that the name 'Ayurveda' never occurs as a marker of self reference, as can be seen in the following sample of concordances:

Concordance 3, 'Ayurveda' in Indian corpus

1	Article experimental	Ayurveda	education: valuating the
2	of teaching KriyaSharira	(Ayurveda	physiology) Himasnshu Joshi,
3	of Kriya Sharir, Faculty of	Ayurveda,	Institute of Medical Sciences,
4	is the ideal way of teaching	Ayurved?	
5	medical science and	Ayurveda	discretely, placing no emphasis
6	is possible in the context of	Ayurveda	education.
7	Key words:	Ayurveda	education, case stimulated
8	The quality of	Ayurveda	education in post independence
9	to suggest that the quality of	Ayurveda	training is poor.
10	teachers from more than 30	Ayurveda	institutions spread across 18

An examination of further markers of 3rd person self reference, such as 'researcher*' and 'author*' does not reveal any divergence between Indian and Western articles in the handling of metadiscursive strategies. It is rather the difference in the total frequency value of 1st person forms in

4. Somik Raha 2013. Foundational principles of classical Ayurveda Research. *Journal of Ayurveda and Integrative Medicine* 4/4, 198-205.

5. Bhushan Patwardhan 2013. Time for evidence-based Ayurveda: A clarion call for action. *Journal of Ayurveda and Integrative Medicine* 4/2, 63-66.

the two corpora (+0.17% for the Western corpus) that may be symptomatic of a tendency to depersonalize author identity in the Indian corpus. This hypothesis appears to be confirmed by an analysis of concordances extracted for the 1st person plural pronoun in subject position. Here follow ten random concordances from each corpus:

Concordance 4, 'we' in Indian corpus

1	Materials and Methods:	We	introduced three different
2	The instructional methods that	we	evaluated were: 1. Integrative
3	In the first two experiments,	we	subjected the experimental group of
4	student feedback was taken as	we	could not have a control group.
5	Considering these facts,	we	planned the present study, where, we
6	the present study, where,	we	developed a few integrative teaching
7	level of Ayurveda education.	We	restricted our inquiry to the field
8	for the purpose of this study,	we	had to define the phrase
9	methods of instruction and	we	defined it as follows: The instructional
10	the homeostasis. In this study,	we	report the results of three experiments,

Concordance 5, 'we' in Western corpus

1	compared with other treatments.	We	gradually increased the dosage until it
2	satisfied). According to the satisfaction scores,	we	categorized the satisfaction as excellent
3	endure the pain until that	we	adjusted the power parameter from
4	360 to 600 sec. In this study,	we	chose 500 sec as the total treatment
5	be accepted. Acknowledgements	We	are grateful to Mr. Stephen Crano
6	of diabetes. In our large study,	we	found that the prevalence of G6
7	PDR, it is also true that	we	found no evidence that it may
8	Actually, in former studies,	we	found hypercholesterolemia in 35
9	cataract. One could argue that	we	compared the prevalence of G6PD
10	Keeping this fact into account,	we	strongly believe that the correct

Concordance lines show that in the Indian corpus self reference through the adoption of the 1st person plural pronoun is always amenable to a detailing of researching procedures, never to a discussion of results. By contrast, the Western corpus deploys 'we' for a variety of purposes, ranging from procedural questions to acknowledgments to discussion of results, which can

at times turn into an enthusiastic plea in favour of an endorsed thesis, as shown in the following excerpt:

(3) Keeping this fact into account, we strongly believe that the correct comparison is to be made between diabetic and non-diabetic subjects, and this is what we performed in our investigation.
(Pinna Antonio / Contini Emma Luigia / Carru Ciriaco / Solinas Giuliana 2013).

As Hyland has poignantly argued (Hyland 2002a; 2002b; 2012), some academic communities prefer to avoid explicit self mention when voicing scientific opinions or endorsing theses in the interpretation of results. This – he suggests – is due either to the disciplinary specificity of the discourse they engage in or to cultural specificities of the community itself. Thus graduate and PhD students at Honk Kong University tend to depersonalize the discussion of results through a variety of metadiscursive resources acting as hedging strategies. Hyland also points out the pervasiveness of this tendency in articles reporting research in the "hard" sciences, while in the humanities he finds that recourse to 1st person author reference is not sparse. Shifting to an analysis of concordance lines in which 1st person forms occur, he ascertains that making claims is the most problematic area in the handling of the individualistic identity implied by the use of author pronouns in academic writing, especially with eastern cultures and with educating communities (graduate and PhD students). In the corpus of student-authored research papers he automatically searched, author pronouns do occur, though seldom when claims are being made. His conclusions appear to go in the same direction as the evidence drawn from an automatic querying of corpus and control-corpus detailed in this chapter. As a matter of fact, the Indian medicine research articles appear to shun the adoption of an individualistic identity, rather favouring a depersonalized presentation of arguments. This preference for impersonal argumentation is further highlighted by the keyness attached to the verbs 'argue' (1.082) and 'believe' (0.130) in the Western corpus, which is symptomatic of a reduced commitment to the interpretation of data put forth in the Indian articles. Concordances extracted for both verbs in the two corpora validate the hypothesis of a higher degree of impersonality attached to the Indian corpus, as 'we' very rarely co-occurs in subject position with either verb, in opposition to the strong authorial commitment implied by the "semantic prosody" (Sinclair 1991) of co-occurrence surfacing in the Western corpus for the words 'we' and 'believe', while the verb 'argue', in the same corpus, collocates preferably with the more impersonal subject 'one', probably in consequence of the need to introduce an element of hedging when debatable conclusions are being drawn.

Concordance 6, 'argue' in Indian corpus

1	like integrative medicine. They	argue	that the core features of the

Concordance 7, 'believe' in Indian corpus

1	it is more likely to	believe	that it GuduchiSwarasa (expressed
2	they are more likely to	believe	ShastanamRasadinamRasayana means
3	the baby adjust after weaning	believe	to be the easiest to digest
4	various bowel complaints. Also, it is	believed	believed to be useful against
5	1.119 0.9997 XRF spectrometry. We	believe	that the K 0.570 – 2.465 0.9994 results
6	dependence on laxatives. Constipation was once	believed	to cause proper time in the
7	than that of morphine. [20] It is	believed	that tramadol works by **μ-opioid**
8	a highly individualized manner as it	believes	that every individual is unique having
9	important factor that makes many scholars	believe	believe that a true integration is not
10	unanswered. Many scholars and sociologists	believe	that there cannot be an entity

Concordance 8, 'argue' in Western corpus

1	of developing cataract. One could	argue	that we compared the
2	transduction. These findings may	argue	against that possibility although
3	analysis. One could also	argue	that established atrial function
4	of these patients. One could	argue	on numbers of patients analyzed

Concordance 9, 'believe' in Western corpus

1	signaling of TFF1 and we	believe	it may be. Detection of
2	status and TFF1 status. We	believe	this was quite a demanding
3	being preliminary in nature, we	believe	that the present study offers
4	used here. In addition, the authors	believe	that if bending strength and
5	electrical cardioversion, we	believe	that our results could be
6	comparison to adults. Therefore, we	believe	that current clinical results
7	grown on Earth. Thus, the authors	believe	that there is a clear distinction
8	Non-(p=0.01) (Figure 1). We	believe	that the difference in calculated
9	or bilateral, but some authors believe	believe	is premature to abandon the
10	fact into account, we strongly	believe	that the correct comparison is

As strategies for depersonalization strongly rely on the adoption of the passive voice, this dimension of the meaning making process – what Halliday terms the "transitive system" (Halliday / Matthiessen 2004) – is scrutinized in the next section.

4. The role of voice in the representation of researching agents

In order to ascertain the frequency of recourse to passivization, I extracted concordances of 'be' forms ('am', 'are', 'be', 'been', 'is' 'was', 'were') followed by an -ed, -ght, -en or -de past participle. Surprisingly, in the Indian corpus the frequency value was identical with that of the Western corpus (1.93%). Raw results were then coupled with frequency values for the preposition 'by' introducing agents within passive sentences. Frequency values were calculated through an extraction of concordances ('be' forms + past participles + by), which were manually perused to disambiguate agentive uses from other uses (e.g.: introducing -ing forms to detail procedures). Agentive 'by' was found to occur 257 times in the Indian corpus, with a frequency value of 0.12%, while in the Western corpus 523 hits of the same word made up a total of 0.18% after disambiguation had taken place. A detraction of these frequency percentages from the values relating to passive constructs yielded the net value of agentless passives: 1.81% in the Indian corpus and 1.75% in the Western corpus. These results do not signal a remarkable difference between the two corpora in the handling of voice, yet they partly validate the hypothesis that research articles written in the tradition of integrative Ayurvedic medicine be characterized by a higher degree of depersonalization in the attribution of scientific responsibility and in the representation of authorial identity. By contrast, articles originating within the conventional approach to medical studies reveal greater variability in the handling of resources for the construction of academic identity, which carries features of both commonality and individuality (Gotti 2009). Differences in the choice to either represent or efface agency in the report of researching practices may be amenable to cultural specificities of the two settings for medical research. Although strategies for depersonalization play a crucial role in both corpus and control corpus – and indeed, in medical discourse at large as well as all scientific discourse (Gotti 2003, 2008; Garzone 2006), irrespective of researchers' cultural backgrounds and methodological approaches to the discipline – Eastern settings appear to privilege a more impersonal and therefore collectivistic representation of authorship.

5. Conclusions

This study of medical discourse has analyzed quantitative data obtained through a routine interrogation of two sets of research articles published respectively by journals specializing in Ayurvedic integrative medicine and by international journals of conventional medicine. The results of automated querying have been checked against a close reading of texts which has made it possible to qualitatively assess and interpret data. This integration of quantitative and qualitative analysis has shown both similarities and

specificities in the handling of discursive and metadiscursive strategies for the construction of authorial identity in the two corpora. In particular, while both strands of medical research make ample recourse to 1st person plural forms and to passivization in the representation of procedures, traditional Ayurvedic researchers tend to shun explicit endorsement of scientific responsibility by privileging 1st person plural forms in combination with verbs detailing steps in their research rather than verbs arguing in favour of their own interpretation of results. These differences may be connected with cultural issues lying at the root of the discursive specificities emerging in the two approaches to medical science. Two distinct hypotheses may provide an interpretative clue to these specificities:

- The two threads of medical research diverge in their handling of authorial identity because they are embedded in cultures laden with opposing features of individualism and collectivism. This would explain why in the conventional approach to medical research explicit self mention through 1st person forms now counts as the norm, while integrative medicine discourse privileges a more depersonalized representation of researching agents.
- The two settings for medical research differ in their choice of metadiscursive strategies of self mention because they represent two distinct stages in the development of a discourse tradition. As a matter of fact, in the past medical – and, more generally, scientific – discourse strongly relied on strategies of depersonalization also in Western settings, and only in recent years has specialized academic discourse started to make recourse to resources of explicit self mention. On the other hand, eastern cultures, whose academic tradition dates back to a more recent past, may not yet have developed a habit of explicit author mention and therefore tend to privilege a communal attribution of scientific responsibility.

In order to shed light on causal links between discursive and cultural phenomena, further research – lying beyond the limited scope of this chapter – is needed, which should ideally integrate cultural studies into a discourse analytical perspective.

References

Anthony L. (2014) "Antconc 3.4.3." Tokyo: Waseda University.
Available at *http://www.laurenceanthony.net/software.html*.

Benveniste E. (1966) *Problèmes de Linguistique Générale*. Paris, Gallimard.

Bhushan P. (2013) "Time for evidence-based Ayurveda: A clarion call for action". *Journal of Ayurveda and Integrative Medicine* 4/2, 63-66.

Garzone G. (2006) *Perspectives on Esp and Popularization*. Milano, CUEM.

Gotti M. (2003) *Specialized Discourse: Linguistic Features and Changing Conventions*. Bern, Peter Lang.

Gotti M. (2008) *Investigating Specialized Discourse*. Bern, Peter Lang.
Gotti M. (Eds. 2009) *Commonality and Individuality in Academic Discourse*. Bern, Peter Lang.
Gotti M. and Salager-Meyer F. (Eds. 2006) *Advances in Medical Discourse Analysis: Oral and Written Contexts*. Bern, Peter Lang.
Halliday M.A.K. and Matthiessen C.M.I.M. (2004) *An Introduction to Functional Grammar.* London, Hodder Arnold.
Himas Nshu J., Girish S., and Kishor P. (2013) "Ayurveda Education: Evaluating the Integrative Approaches of Teaching Kriyasharira (Ayurveda Physiology)". *Journal of Ayurveda and Integrative Medicine* 4(3), pp. 138-146.
Hyland K. (2002a) "Options of Identity in Academic Writing". *ELT Journal* 56(4), pp. 351-358.
Hyland K. (2002b) "Authority and Invisibility: Authorial Identity in Academic Writing. *Journal of Pragmatic* 34, pp. 1091-1112.
Hyland K. (2005) *Metadiscourse: Exploring Interaction in Writing*. London, Continuum.
Hyland K. (2012) *Disciplinary Identities: Individuality and Community in Academic Discourse.* Cambridge, Cambridge University Press.
KurandeV.H., Waagepetersen R., et al. (2013) "Reliability Studies of Diagnostic Methods in Indian Traditional Ayurveda Medicine: An Overview". *Journal of Ayurveda and Integrative Medicine* 4(2), pp. 67-76.
Maingueneau D.M. and Cossutta F. (1995) **"**L'analyse des Discours Constituants". *Langages* 117, pp. 112-125.
Pinna A., Contini E.L., et al. (2013) **"**Glucose-6-Phosphate Dehydrogenase Deficiency and Diabetes Mellitus with Severe Retinal Complications in a Sardinian Population, Italy". *International Journal of Medical Sciences* 10, pp. 1907-1913.
Sinclair J. (1991) *Corpus, Concordance, Collocation*. Oxford, OUP.
Somik R. (2013) "Foundational principles of classical Ayurveda Research". *Journal of Ayurveda and Integrative Medicine* 4/4, 198-205.
Stubbs M. (1996) *Text and Corpus Analysis.* Oxford, Blackwell.
Tognini-Bonelli E. (2001) *Corpus Linguistics at Work.* Amsterdam and Philadelphia, John Benjamins.
Wilson J. (1990) *Politically Speaking: The Pragmatic Analysis of Political Language*. Oxford, Blackwell.

A FRAMEWORK FOR MEDICAL POSTER MULTIMODAL ANALYSIS: A PILOT STUDY

Stefania Maci
Department of Foreign Languages, Literatures and Cultures
University of Bergamo

Abstract

Recent decades have been characterized by an incredible intensity of social change, eased by progress and technology, which, through digitization, have facilitated the processes of globalization and mobility (Fairclough 2006). In this context, speed has been positively seen as a manifestation of efficiency (Kress 2010). In academia, this is indirectly confirmed by 'publish or perish' pressure, that is the possibility academic members have to acquire professional recognition. Such speed is not only supported by the proliferation of specialised journals, the place where research can be printed and prestige can be acquired, but also by international conferences, the place where research can be 'shown'. This is particularly true for the medical sciences.

In conferences in particular, efficiency has often been identified with the organizing of poster sessions, because «[g]iven the limitations of time, the poster format does provide for the maximum number of presentations to be scheduled in a given period, space permitting» (Pearce 1992: 1680). Medical poster sessions seem to be preferred both by researchers and conference organizing committees.

There is a large amount of literature available on medical posters by scientific authors. From the perspective of applied linguistics, the genre of posters has undergone little investigation. The first description of posters was offered by Dubois (1985a, 1985b). Swales and Feak (2000: 81) suggest that posters have for many years been "the poor country cousin of papers".

Apart from some scholars (Burgess/Fagan 2004; Swales 2004; MacIntosh-Murray 2007) who describe the genre of posters rather than analysing it, to the best of my knowledge, the only contribution in terms of multimodal analysis of academic posters is offered by D'Angelo (2010). Given the limited analysis of the genre of medical posters from an applied linguistics perspective and, at the same time, the enormous demands placed on posters as visual representations of scientific knowledge, though with a lack of any systematic and consistent analysis of visual elements, as different forms of discourse, contributing to the construction of the meaning making, it is the aim of this paper to create a framework for the multimodal analysis of medical posters.

As posters are viewed in context, along with dozens of others, it is certainly essential to capture the audience's attention. Drawing from Kress and van Leeuwen (1996), my assumption here is that such a requirement is commonly met thanks to appropriate interrelation between visuals and text for the sake of achieving effective communication.

1. Introduction

Recent decades have been characterized by an incredible intensity of social change, eased by progress and technology, which, through digitization, have facilitated the processes of globalization and mobility (Fairclough 2006). In this context, *speed* has been positively seen as a manifestation of efficiency (Kress 2010). In academia, this is indirectly confirmed by 'publish or perish'[1] pressure, that is the possibility academic members have to acquire professional recognition. Such speed is not only supported by the proliferation of specialised journals, the place where research can be printed and prestige acquired, but also by international conferences, the place where research can be 'shown'. This is particularly true for the medical sciences. For instance, in 2013, MEDLINE[2] counted 14,555 indexed medical journals[3]. In addition, a Google search for the phrase 'medical conferences 2013' yielded 120,000,000 'hits'.

As regards conferences in particular, efficiency has often been identified with the organizing of poster sessions, because «[g]iven the limitations of time, the poster format does provide for the maximum number of presentations to be scheduled in a given period, space permitting» (Pearce 1992: 1680). Medical poster sessions seem to be preferred both by researchers and conference organizing committees. Indeed, in an informal conversation we had with Dr De Castro, the Director of the Publishing Activities Unit of Istituto Superiore di Sanità, the National Health Institute of Italy (*www.iss.it*), apart from 'logistical' reasons, the organisation of poster sessions is also due to their ability to offer the chance to create relaxed interaction between the poster author and the audience, from which they can all receive benefits in terms of scientific support and communication exchange. In addition, the informality created by a poster session forum encourages the development of new research projects. Moreover, although posters must conform to the 'editorial' requirements of the organizing committee, as far as size and format are concerned, authors write creatively in order to attract a potential audience, to inform and to persuade. From a more practical point of view, researchers may prefer poster presentations rather than oral presentations because the abstract of their poster can be published in major medical journals, which is a convenient means for the furthering of medical careers.

There is a large amount of literature available on medical posters by scientific authors. Medical associations (AIFA 2005; American Heart Association 2011) offer guidelines, whereas medical authors propose advice related to poster size, fonts, layout and presentation (Hess et al. 2009; De

1. This expression was first mentioned by Wilson (1942).

2. MEDLINE is the U.S. National Library of Medicine, available at: *http://www.nlm.nih.gov/* [11/01/2014].

3. Data retrieved from PUBMED at *http://www.nlm.nih.gov/tsd/serials/lsiou.html* [11/01/2014].

Castro 2009; Purrington 2009; Stoss 2010). Some authors underline the importance of the use of colour in order to attract potential readers (cf., for instance, Willet et al. 2008). Others suggest how digital tools can be exploited in poster presentations (Dogan Bozdag 2008; Huang et al. 2008). Posters have also been investigated as a situated practice (Brown/Duguid 1991; Gherardi 2000, 2001; Wenger 2000), as a tool for professional development (Miracle 2003), and as a teaching and evaluation device within university courses (van Naerssen 1984; Bracher et al.1998; Hay/Thomas 1999). For instance, Ellerbee (2009) suggests that poster elaboration is a fundamental aid in learning how to intermix visuals and scientific texts in order to create a communicatively effective genre. The importance of visuals in posters has been emphasized ever since the end of the 1980s (Woolsey 1989), given their role in facilitating medical communication. Overall, the general opinion is that posters are regarded as a visual medium (Rowe/Ilic 2009) able to display research key points highlighted by the authors and followed by interaction with the audience.

From the perspective of applied linguistics, the genre of posters has undergone little investigation. The first description of posters was offered by Dubois (1985a, 1985b), who examined the generic features of posters and the ways in which they are presented. She underlines their main function of *popularizing* scientific communication by exploiting the elements used to attract a professional, as well as a non-(medical)specialist, audience in order to create potential networks amongst research teams. Swales and Feak (2000: 81) suggest that posters have for many years been «the poor country cousin of papers, but recently they have gained in status»; their approach is mainly pedagogical and aimed at helping novice writers to produce effective posters, defined by the authors as the public display of academic writing (conclusions which are also reached by Burgess/Fagan 2004). Swales (2004: 21) considers the genre of posters to be a hybrid form falling between «elements of the research paper and conference visuals or handouts». Indeed, he sees posters as a multimodal communicative event, with text, graphics, colour and (interactive) speech used to convey meaning. On the other hand, MacIntosh-Murray (2007) claims that learning to communicate scientific knowledge through posters is much more than mastering poster fonts, colours and sizes: posters form a complex genre because of the multiple role they play both in written and oral communication, which has to combine with (a) professional, editorial and generic constraints, (b) interaction with an expected audience and (c) professional prestige. In addition, posters are meant to stand alone, without the presence of the presenter. In other words, posters are supposed to *do* the talking (MacIntosh-Murray 2007: 351-352) and *show* medical research. To the best of our knowledge, the only contribution in terms of multimodal analysis of academic posters is offered by D'Angelo (2010), who however is interested in the ways in which interactional and interactive strategies are exploited to guide the readership through verbal and visual

elements characterizing posters and to involve them in a dialogic interaction with the poster's author.

Given the limited analysis of the genre of medical posters from an applied linguistics perspective and, at the same time, the enormous demands placed on posters as *visual* representations of scientific knowledge, though with a lack of any systematic and consistent analysis of visual elements, as different forms of discourse, contributing to the construction of the meaning-making process, it is the aim of this paper to create a framework for the multimodal analysis of medical posters. Our investigation begins with the following research questions:

1) How is meaning constructed in medical posters?
   a. For meaning-making purposes, how are linguistic and visual patterns exploited?
   b. What is the relationship between these patterns?
2) Can a framework for multimodal analysis be created?

As posters are viewed in context, along with dozens of others, it is certainly essential to capture the audience's attention. Drawing from Kress and van Leeuwen (1996), our assumption here is that such a requirement is commonly met thanks to appropriate interrelation between visuals and text for the sake of achieving effective communication.

2. Corpus and methodological aspects

In order to understand what type of posters should be collected, a background survey questionnaire was conducted online (*http://freeonlinesurveys.com/rendersurvey.asp?sid=0o5c4btwxd6cfzk876238*); also, thanks to the support of the editorial staff of the online journal *Va' Pensiero,* produced by Pensiero Scientifico Editore, an Italian scientific publishing house, this was publicized at *http://www.pensiero.it/news/news.asp?IDNews=1110*. Amongst the doctors who completed the questionnaire, four were available for interview. In addition, the Director of the Publication Activities Unit of the ISS was contacted to gather information on the role of poster presentations within the academic medical community. In all cases, however, both the survey and the interviewees emphasized the fact that posters are presented at conferences while the research project is still in progress and, preferably, if conference organizing committees offer a poster award. As the Head of the ISS stated, apart from medical conference venues, the main place to find posters is on the Net. She also underlined the fact that if the abstract of a poster is accepted for publication, this can further a medical career, so it was decided to check what types of medical journals published the abstract of a poster. Since the first news item about medical posters was published in 1974

(Maugh 1974), a search wasstarted from 1975 through MEDLINE (*www.medline.cos.com/*) and PUBMED (*www.ncbi.nlm.nih.gov/pubmed/*), the most authoritative online databases containing citations and abstracts taken from health and medical journals, as well as the Journal of Citation Reports (*http://thomsonreuters.com/products_services/science/science_products/a-z/journal_citation_reports/*), which helped us to identify the journals with the highest impact factor (henceforth IF)[4]. Amongst all the medical journals available, we found that the journal which began the publication of poster abstracts was the *American Journal of Epidemiology*. We therefore decided to concentrate on posters specializing in the epidemiological field. We then searched on the Net for all the available posters presented at congresses and published online by institutions and medical schools, as well as by online journals with an ISSN code and specialising in poster publication. We were thus able to collect more than 532 posters written in English and presented at scientific conferences between 2001 and 2011 from the following websites:

- Istituto Superiore di Sanità, *http://www.iss.it*;
- Barts and The London NHS Trust, *http://www.ihse.qmul.ac.uk/cme/bscmeded/poster/index.html*;
- The New York City Health and the Mental Hygiene Department, *http://www.nyc.gov/html/doh/html/dires/epi_posters.shtml#2002*;
- The International Conference on Retroviruses and Opportunistic Infections (CROI), *http://www.retroconference.org/*;
- The 2011 International Conference on Meningitis, *http://www.meningitis.org/posters*;
- eposternet, *http://www.eposters.net/*;
- F1000, *http://f1000.com/posters*;
- Posters uploaded at *www.slideshare.net.*

The selected posters have been saved in ppt and/or pdf format in order to allow the multimodal analysis. Copyright permissions to use the posters collected and published online have been granted by all institutions and journals above listed.

Given the great number of posters we collected, in order to create a framework for the multimodal analysis of posters to be extensively applied to all posters, we decided to first conduct a pilot study about the multimodal features characterizing medical posters presented at conferences. A sample of posters was thus selected to be part of the pilot study[5]. Selection was carried out randomly by including the first poster downloaded for each year and from each site listed above but CROI. In addition, considering the fact

4. The impact factor (I.F.) is a measure of the citation rate per article, used to indicate the importance of a journal in its field. See *ISI WEB of Knowledge* (available at: *http://www.isiwebofknowledge.com/*).

5. See the *Appendix* for the list of the collected corpus used in this investigation.

that the CROI corpus consists of 422 posters (79% of all collected corpus), we tried to maintain the same proportions. Thus a very small corpus of 11 posters was created. The research tool employed for this multimodal analysis is ATLAS.ti, a software for qualitative data analysis, allowing the manual tagging on any type of documents, image, audio and video files included. All the texts of the selected posters forming this pilot study corpus were then closely read in order to form an overall impression of their content and argumentative strategies. A qualitative analysis was then carried out.

3. Preliminary results

3.1. Descriptive Analysis

As we can see from Fig. 1 and Fig. 2 below[6], posters can be realized in varying shapes and sizes (1m x 2m or 4-ft x 8-ft), contain varying numbers of tables and graphs, may have neither references nor abstracts.

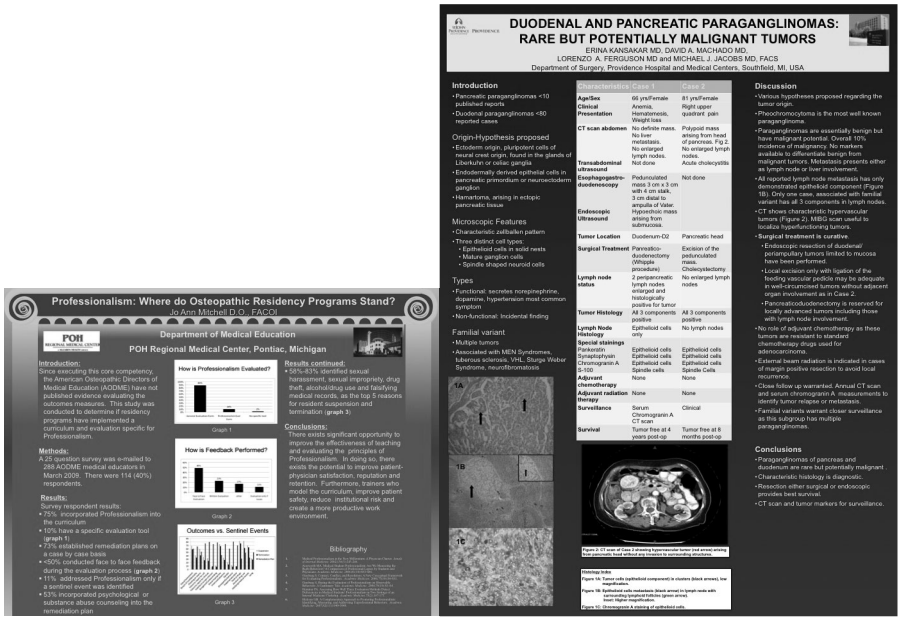
The narrative pattern they describe is, however, always vertical. The reading path offered is strategically indicated according to the various Introduction-Methods-Results-Discussion (IMRD) sections[7], whose headings are always indicated in the text. The reader can therefore, by following the labels, construct the correct reading pattern.

Generally, the background on which the text is written is white, but in a few cases it has a soft colour, such as light blue, and in one it is a deeper blue. The fonts of both title and text are normally black when the poster background is light and white when it is dark; in one case, the background is orange for both the title and IMRD headings, and the fonts are in an even more saturated orange. Sometimes colour is used as a background to highlight the summary of the results or certain figures in various tables. In one case, colour is used to pinpoint keywords within the text. Different types of colour are used in diagrams, in bar- and pie-charts and in maps; in other words, colour is used whenever variables indicating different distributions of patients, diagnoses, treatments or diseases are evidenced.

6. I thank Dr David M Svinarich Director of the Patient Care Research and SJHS Research and Development of Providence Hospital, Providence, U.S., for allowing me to reproduce two of the posters created by some 2010 Fellows and Residents and presented at medical conferences in 2009 (Fig.1) and 2010 (Fig. 2), respectively.

7. Written medical discourse is highly codified (Dahl 2004: 1822) and is based on a set of constraints described in the *Uniform Requirements for the Manuscripts Submitted to Biomedical Journals* (known as the *Vancouver Style*), drafted in 1978 by the International Committee of Medical Journal Editors (ICMJE) and published in 1991 in the *British Journal of Medicine* (for an updated version, see *http://www.icmje.org/urm_main.html* [11/01/2014]). The generic constraints required by the ICMJE have clearly influenced the linguistic pattern of posters: they have followed the same organizational conventions as other scientific writing.

Figures 1 – (left) and 2 (right). Poster samples



The composition plan in its vertical narrative pattern contains a number of visual elements whose percentages range from 15% to 80%, with an average of 40%. The types of visual elements included in our corpus comprise photographs, drawings, diagrams, maps. In this analysis, however, tables have been considered as visual elements. It is true that tables normally include written text and numbers, with no iconic elements. Nevertheless, the way in which a reader decodes the various elements characterizing tables in order to interpret and understand them is different from the way in which we normally encode and decode a communicative event, be it written or oral.

Interestingly, there is a predominance of visual elements in the *Results* section, as summarized in Table 2. Guidelines suggest avoiding complex tables comprising lots of numbers, because not only are they generally difficult to read but, also and above all, numbers have to be explained (Di Blasio 2004; Miller 2007). Instead they recommend charts as the best way to convey numeric patterns: they are able to immediately show group sizes, and simultaneously compare results and newly-discovered trends, thus reducing long text descriptions. As Matthews and Matthews (2007: 57) claim, tables convey a different meaning from graphs, since the former present exact values and raw data, while the latter represent a trend or an interaction between two or more variables and emphasize the overall pattern, rather than specific measurements. However, the data in our corpus suggest a different trend in the use of tables, graphs and charts: they are all *evenly* distributed in the

*Table 1 – Breakdown of medical poster visual elements. (Legend: P = Poster; H = horizontal; V = vertical; * = Table)*

Poster	*Visual %*	*Layout*		*Narrative pattern*		*Background colour*		*Font colour*		*Pictures*				*Bar-charts*				*Pie-charts*				*Flow-charts*				*Diagrams*			
		V	*H*	*V*	*H*	*heading*	*text*	*heading*	*text*	*I*	*M*	*R*	*D*	*I*	*M*	*R*	*D*	*I*	*M*	*R*	*D*	*I*	*M*	*R*	*D*	*I*	*M*	*R*	*D*
P1	35	√	-	√	-	blue	light blue	white	black	-	-	-	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
P2	25	√	-	√	-	black	light blue	white	black	-	1	1	-	-	-	-	-	-	-	-	-	-	1	2	-	-	-	-	-
P3	35	√	-	√	-	white	white	light blue	black	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-
P4	21	-	√	√	-	black	white	white	black	-	-	4	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	1
P5	15	√	-	√	-	orange	yellow	orange	black	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-
P6	30	√	-	√	-	electric blue	white	black	black	-	1	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-
P7	80	-	√	√	-	blue	electric blue	white	white	-	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-
P8	60	√	-	√	-	white	white	light blue	black	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	1	-	3*	4
P9	50	-	√	√	-	white	blue	black	white	-	-	1	-	-	-	4	-	-	-	2	-	-	-	-	-	-	-	4	-
P10	35	-	√	√	-	light blue	white	black	black	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3*	-
P11	60	-	√	√	-	white	white	purple	black	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	4*	-

Table 2 – Distribution of visual elements across IMRD

			I	*M*	*R*	*D*	*Other non-IMRD positions*	*TOTAL*
Pictures	Drawings		-	-	-	-	-	-
	Photo	Humans	-	2	1	-	1	4
		Tissues	-	-	4	-	-	4
		Places	-	-			4	4
		Objects	-	2	1	-	5	8
Diagrams	Geographical maps		-	1	1	-	1	3
	Bar-charts	-	-	10	1	-	11	
	Pie-charts	-	-	2	-	-	2	
	Flow-charts	-	1	3	-	-	4	
	Statistical diagrams		1	-	7	1	-	9
	Tables	-	-	14	-	-	14	
		Total	*1*	*6*	*43*	*2*	*11*	*63*

Results sections. Indeed, there is acertain symmetry in the use of tables and charts. Precisely because most posters present preliminary findings, graphs must be used with caution, since the lack of complete data impedes the elaboration of generalized trends characterizing the scientific phenomenon under investigation. In addition, flow-charts and graphs require data and conventions which have to be interpreted. On a poster, the main feature is the effortless grasp of the whole meaning, rather than the interpretation of specific meanings. The presence of tables, therefore, improves the efficacy of poster communication.

3.2. A socio-semiotic analysis

3.2.1. Introduction

We will now look at the way in which meaning is socially and culturally constructed in the discourse of medical posters, with particular regard to the iconic elements and their interrelation with written text. The visual and verbal elements exploited in medical discourse are organised in such a way as to create meaning. These sets of socially shaped and culturally given resources for meaning-making are defined as *modes* (Kress 2010: 79). The most traditional forms or modes of communication are speech and writing (Bezemer/Jewitt 2010: 181). Yet, when other forms or modes

of communication are used in conjunction with speech and writing, the potentialities of communication are expanded. In this sense, «'mode' is privileged as an organizing principle of presentation and communication and therefore treated as a central unit of analysis» (Bezemer/Jewitt 2010: 183). As people use different modes simultaneously to create complex multimodal communicative events, our analysis will follow a socio-semiotic approach on the basis that when different communication modes (in this case verbal and visual) are interwoven, they contribute to meaning-making.

3.2.2. Poster layout

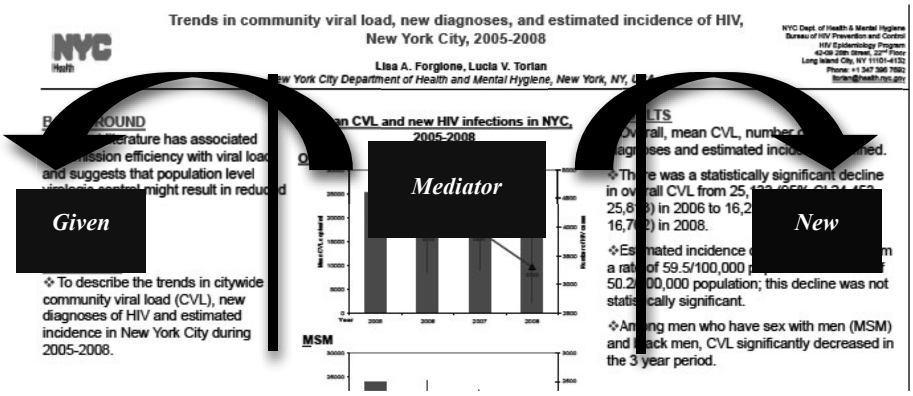
Posters can be seen as forming a visual chart in which any text, images included, can be *read* and interpreted. The layout or *composition* (Kress/van Leeuwen 1996: 181-229) of elements in a framed space presents information as well and orients readers to classifications of knowledge (Kress 2010: 92).

Since in Western society texts are read from left to right, from top to bottom, and line by line, Kress and van Leeuwen claim that the so-formed Z-reading pattern is the most immediate and natural one and helps us to define the *zones* where the different visual elements, and corresponding informational values, are set. Therefore, information placed on the left-hand part of the page is normally classified as *Given* (where old pieces of information are set); information placed on the right-hand part of the page is *New* (where new or an expansion of previously provided information is developed); what is positioned on the top is *Ideal* (where there is a representation of what the world should be like) and what is located on the bottom is *Real* (where what the world is actually like is shown). Elements placed in the *Centre* carry the nucleus of information, whereas all the rest is sited in the *Margins* and is subsidiary to the centre.

Furthermore, elements are not only located according to the *Given-New*, *Ideal-Real* and *Centre-Margin* triptych, but also in such a way as to attract the reader's attention and direct it to different levels of importance. Indeed, choices of colour, size and image sharpness, and the position and presence of vectors, i.e. ideal lines created by the shape and position of elements, establish the *Salience* of each element and help to lead the interpretation of the text from one element to another, in order of decreasing impact (Kress/van Leeuwen 1996: 212-214).

Sometimes, division or unity within a text is implied through some elements positioned so as to create frames, or sections, which give the text a sense of unity and progression. The *Framing* of an element suggests its differentiation and individuality, while the lack of *Framing* suggests unity and presents the picture as a whole (Kress/van Leeuwen 1996: 214-218).

Figure 3 – Visual elements as mediators between Given and New



From the analysis of the posters forming our corpus, the results tend to suggest that visual elements are primarily located in the central part of the poster, regardless of whether the poster has a horizontal or a vertical layout, and therefore entail *Given-New* or *Ideal-Real* patterns. Indeed, the visual elements are the *mediator* between the *Given-New* and *Ideal-Real* (cf. Figure 3)[8], no matter what layout the poster has. Therefore, they are located in the most important part of the whole text, the *Centre,* to which all the rest is subsidiary. In addition, since poster texts are discursively organized in vertical columns and divided according to the IMRD pattern, whenever a visual element occurs together with a textual one within the same section, the iconic element of the text generally occupies the *Real* part.

3.2.3. Poster modality

In a context where a lot of posters are seen simultaneously, as in poster sessions at medical conferences, the author's top priority is to attract potential viewers' attention. The easiest way to do so is by the creative use of visual elements, colour included. Colour as a semiotic resource can be a mode and is multifunctional in its use in the culturally located making of meaning (Kress/van Leeuwen 1996). However, the genre of poster is one among many means by which scientific knowledge is spread. Since the purpose of scientific communication is to spread what is real, what can be counted, measured and weighed, an excess of creativity may be seen as *non-real* and having low modality (cf. Kress/van Leeuwen 1996: 159-180). In the socio-semiotic field, *modality* is defined as what produces shared truth; in other words, it does not refer to truth but rather to credibility, since it shows whether a

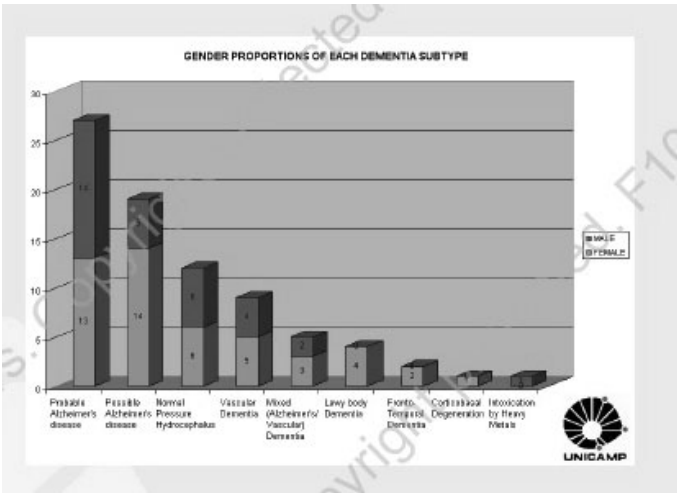
8. The poster reproduced is available at *http://www.retroconference.org/2005/CD/Sessions/166.htm*, where only those posters for which their authors have given permission for them to be downloaded can be found.

given element is presented as being true or not. Hence, modality aligns the members (in this case poster authors and poster viewers) of the social group (i.e. the medical community) for which the text (i.e. the poster) is mainly intended. Following Kress/van Leeuwen (1996: 169), poster modality has a set of abstract principles, known as *coding orientation principles*, informing how texts are coded by the medical community: (1) technological coding orientation and (2) abstract coding orientation. The former indicates that the visual representation is effective if it is regarded as a 'blueprint', or a model – and indeed any use of colour in scientific communication is regarded as having low modality if it is redundant and useless. The latter suggests that the more the individual is reduced to the general and the concrete to its essential qualities the higher is the modality. In addition, the use of colour indicates modality along an axis, as shown in Figure 4 below:

Figure 4 – Modality representation through use of colour

The posters forming our corpus are, with one exception, to be regarded as blueprints, or models, of the reality investigated on by the scientist. In such representations, tables, charts and diagrams are backgrounded by soft colour and/or white: in this way the scientist represents the essential and generalised qualities of the world as depicted by him/her (cf. Figure 5)[9]:

Figure 5 – Use of background colour



9. I thank F1000 (at *www.F1000.com)* for their permission to reproduce elements from the poster (which has been included in our corpus).

The excerpt reproduced in Fig. 5, for instance, offers an example of the use of colour: the general background is characterized by soft colours, which indicates moderate modality, yet the bar-chart is inserted in slots which have a white background: modality here is at its utmost. As for the colours of the bars, they are extremely bright and saturated, which apparently goes against scientific modality. However, they are used because their purpose here is to highlight the different variables under consideration.

3.2.3. Poster visual elements

According to Kress and van Leeuwen (1996: 79-118), in a socio-semiotic approach, images are *representational structures*, which can be *narrative* when they express action, or *conceptual* when they are descriptive. Most visuals of the posters we collected for this investigation represent tables, charts and diagrams. These visual elements are *conceptual structures* which denote the participants, or *carriers*, involved in them in terms of their constant enduring essence, or *possessive attributes*: they represent static concepts (Kress/van Leeuwen 1996: 59). These conceptual structures can be listed as three groups: (a) classificatory; (b) analytical; (c) symbolic. Classificatory structures can be *hierarchical* (such as taxonomies), *processual* (such as flowcharts) or *non-linear* (such as networks). Analytical structures (such as tables or diagrams) have no hierarchy but are foregrounded; therefore, they are more interactional and persuasive. Symbolic structures represent what a subject means (such as a map) and can be *attributive* (such as Da Vinci's *Mona Lisa*) or *suggestive* (such as Munch's *The Scream*).

The types of structures found in our corpus are summarized in Table 3, below:

Table 3 – Classification of visual elements in posters

Kress and van Leeuwen's conceptual structures framework (1996)				*Type of visual found in poster corpus*
Conceptual structure	Classificational	Covert Overt		*Bar-charts, diagrams*
	Analytical	Unstructured		*Tables*
		Structured		*Bar-charts*
		Temporal	Conjoined	*Bar- and pie-charts, maps*
		Exhaustive	Compound	*Drawings*
		Inclusive		
		Topographical	Dimensional	*Drawings, maps*
			Quantitative	*Bar- and pie-charts*
		Topological		*Diagrams, drawings*
		Spatiotemporal		
	Symbolic	Attributive		*Pictures*
		Suggestive		*Pictures, drawings*

While classificational *covert* structures are hierarchically symmetrical, *overt* ones are characterized by the presence of a superordinate-subordinate hierarchy. Structures are *structured* when the carrier and its attributes are shown, and *unstructured* when only attributes are depicted. *Temporal* structures represent a gradual unfolding of events. *Exhaustive* structures have a connection with or disengagement from all of the carrier's attributes; *compound* structures maintain all the attributes together; *inclusive* structures offer partial inclusion or exclusion of one attribute in relation to another. *Topographical* structures represent physical and spatial relations and the relative location of the attribute. They can be either *dimensional* or *quantitative* when a visual is drawn to scale based on a quantity or frequency of participants taken to be identical. *Topological* structures accurately represent the logical relation between participants, but not their actual physical size and distance. *Spatio-temporal* structures are those in which a conjunction is created by a two-dimensional diagram of analytical structures and a timeline. And last, *symbolic* structures are *attributive* when the carrier 'is' or 'means', and *suggestive* when one carrier is represented in a 'mood' or 'atmosphere'.

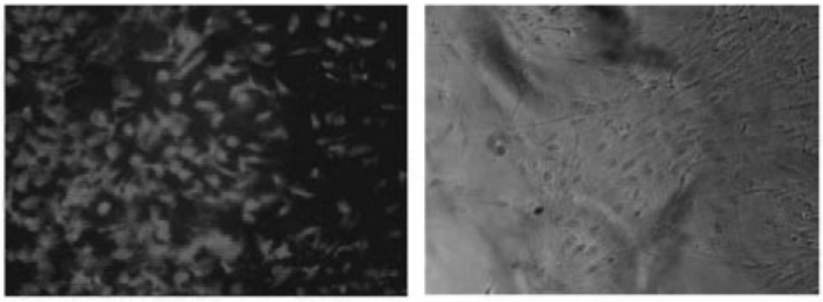
As we can see from Table 3 above, the types of diagrams found in our poster collection can simultaneously refer to more than one structure. For instance, pie-charts, which are analytical diagrams, can be exhaustively conjoined and topographically quantitative; sometimes, there are cases in which bar-charts are overtly classificational and structured and, at the same time, represent the gradual unfolding of events characterizing a phenomenon, as if along a timeline. These diagrams are in scientific discourse which encodes an objective attitude in two ways by exploiting (1) a frontal or (2) a perpendicular top-down angle. These angles locate the viewer in a privileged position. Indeed, the frontal angle, by neutralizing perspective (which is 'how we see it') grants objective knowledge; the perpendicular top-down angle is the angle of maximum power (Kress/van Leeuwen 1996: 149) which is directed toward objective knowledge by letting the viewer contemplate it from a god-like viewpoint.

One of the elements not taken into consideration by Kress and van Leeuwen is size. Four pictures, which depict symbolic attributive structures, are images of tissue as seen magnified by a microscope, as Figure 6 reveals[10]:

These types of shots indicate the highest modality, as they reveal 'how it is' rather than 'how we see it'. These (human) tissue samples are seen as objects, outside their natural context, and with no perspective at all. While objectifying human beings as mere tissue, which grants the utmost personal detachment and the highest scientific involvement (these pictures do not *demand* individual but rather scientific involvement, as they *invite* taking a microscopic look at the phenomenon described), the top-down angle of these photos locates the reader in the same privileged god-like position the

10. These photographs are taken from a poster downloaded from *www.slideshare.com*, a site allowing the downloading and uploading of freeware presentations, documents and professional videos.

Figure 6 – Photographs of magnified tissue



researcher has. The size, i.e. microscopic scale, seems to reveal an interactive relation between the visual and the viewer on the basis of which meanings are constructed.

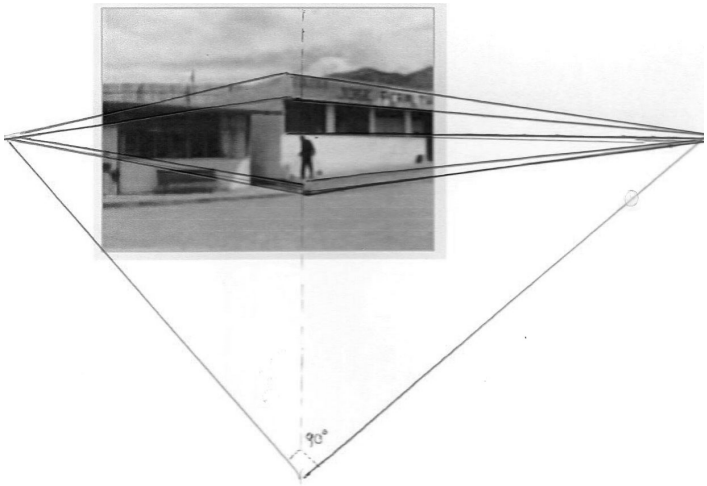
Some posters forming our corpus do have pictures of humans, as in the example below:

Figure 7 – The depiction of human beings on a medical poster (http://www.meningitis.org/assets/x/53932)

These photographs, marginally relating to scientific discourse, show humans in narrative representations where they can be actors (those who do the action) and goals (those to whom the action is done and involved in transactional and reactional processes). They normally do not align photographers and represented subjects, which are seen «from the sidelines» (Kress/van Leeuwen 1996: 141). Indeed, in all the pictures involving human beings, the vanishing points fall:

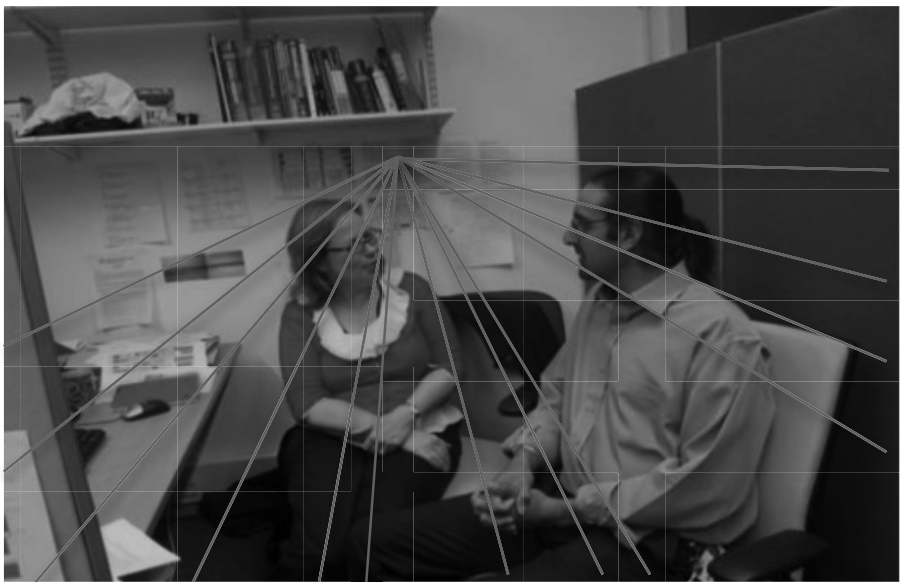
(1) outside the vertical boundaries of the image, with the frontal plane of the photographer/researcher diverging from the frontal plane of the subjects which are diverging – thus forming an oblique angle representing detachment (as in Fig. 8);

Figure 8 – The depiction of a human being and the picture vanishing point on a medical poster



(2) inside the vertical boundaries of the image, with the photographer's frontal angle running parallel with an object rather than human beings, with whom the photographer/researcher has an oblique angle (as in Figure 9 below, where the vanishing point falls on the posters on the wall)[11].

Figure 9 – The depiction of a human being on a medical poster



11. Whole poster downloadable at: *http://www.nyc.gov/html/doh/html/dires/epi_posters.shtml#2002*.

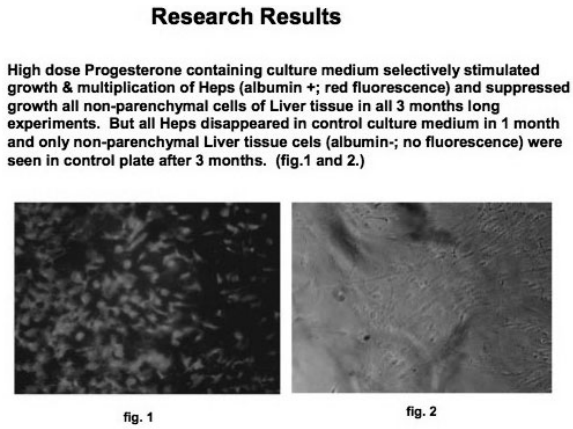
In these pictures, scientific involvement seems therefore to be minimal (cf. Kress/van Leeuwen 1996: 140-146). In addition, since they are not specifically scientific, and have little relation with the text of the poster, they may have a primarily appealing function, attracting the potential reader and showing in what type of context the study under investigation might be applied.

3.3. The interrelation between written and visual modes

As seen in *3.2.2,* the composition plan of the poster plan sets the most relevant elements of scientific discourse in the *Centre*. They are, therefore, foregrounded and play the role of *mediator* between either the *Ideal-Real* (top-bottom) or the *Given-New* (left-right) parts of the text. These central elements, to which all the rest is subsidiary, are mainly formed by visuals. Thus, in posters, there seems to exist a text-visual-text alternation, which can have a horizontal or vertical layout. Hence, a sort of interrelation between the written and iconic modes must exist. An in-depth analysis of the posters forming our corpus allowed us to elaborate a frame evidencing the relation between the written text and the iconic element. Such relation can be listed in two categories, which we define as *illustrative* and *stop-off relations.*

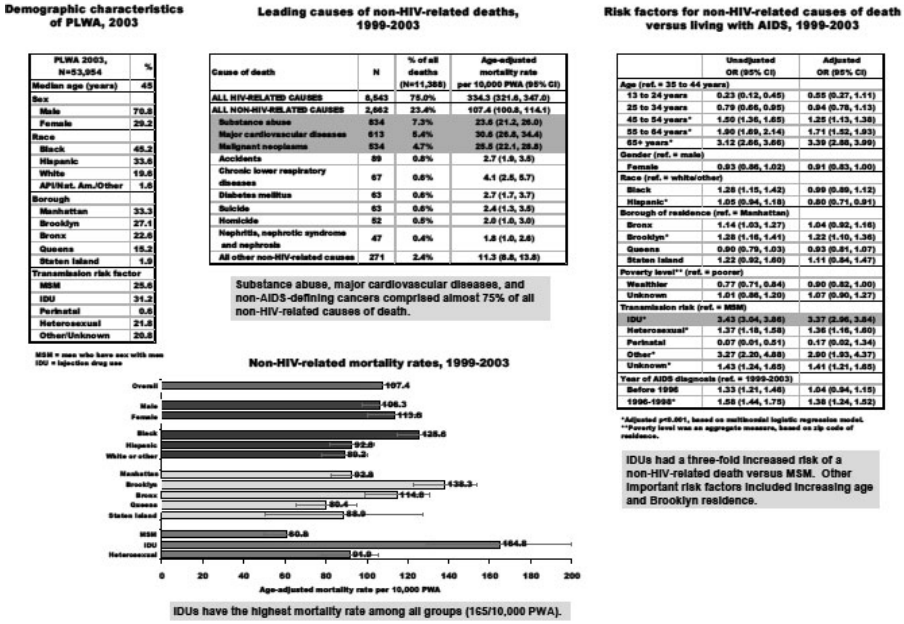
The *illustrative relation* occurs when pictures duplicate the text by visually illustrating what has been represented linguistically. They visually explain the content of the written mode and facilitate comprehension. This is, for instance, the case with 'text plus tables' or 'text plus drawings', where the iconic element summarises what has been just explained in the text. Sometimes the pictorial and linguistic elements have an 'anchorage' function (Barthes 1977), where the text elaborates the information given in the visual without providing new information. This seems to be the case with 'drawings, bar-chart, pie-chart and diagram plus text', or with 'visual plus legend', offered for the analysis of a visual being considering more than one variable:

Figure 10 – Example of an illustrative relation



A stopping-off relation, in contrast, is realized when the written text stops abruptly and scientific discourse is continued, not in the following section or on the following page, but by the visual itself:

Figure 11 – Example of a stopping-off relation



As we can see from Fig. 11 above, the only text occurring in the *Results* section of this poster is that present in the tables and in the captions, namely the variables/measurements/size/characteristics under investigation. The whole meaning carried by these visual elements is, however, not explained in any way but has to be interpreted by the reader him/herself. The results, in other words, are visually displayed in the tables and in the bar-charts without any illustrative text as: medical discourse, here is *the* visual component of the whole poster.

By adapting the Matrix Language Frame Model (Myers-Scotton 1997: 220), applied to code-switching contexts, into this multimodal analysis, we can further analyse these relations in linguistic terms. According to the Matrix Language Frame Model, *code-mixing* occurs when the speaker who uses one language (L1) as the *matrix language* inserts into it mixed constituents from another language (L2). If we apply this to modes rather than to languages, it can be said that *illustrative relations* are a case of *mode-mixing* whereas *stop-off relations* are forms of *mode-switching*. In other words, the author uses mode-mixing when s/he employs the mode which sets the linguistic frame (the text) with mixed constituents (the visual). In contrast, whenever

the author uses both linguistic and iconic modes as matrix modes, going to and fro from one to the other, we can speak of mode-switching. In addition, as Thompson (2001) aptly points out, whenever writers want to guide readers through the text itself, they exploit interactive strategies; when, in contrast, their aim is to involve readers dialogically in the text, authors use interactional strategies. When the poster author uses mode-mixing in scientific discourse, s/he will resort to interactive strategies to establish the reading path of the poster; if the poster is characterized by mode-switching, then the author is employing interactional strategies in order to engage readers in his/her scientific reasoning pattern. Hence, mode-mixing posters, guiding the reader through textual organization, will be mainly content-oriented; mode-switching posters, appealing to readers or involving them in an interaction with the author, will be reader-oriented.

4. Conclusions

In this analysis we have tried to create a framework for the multimodal analysis of medical posters. We have seen that, in order to create meaning, the poster author exploits the modes s/he has at his/her disposal, namely the iconic and verbal ones. These elements are used differently on different levels (see Table 4, below).

On one level, the author exploits the opportunities offered by the composition plan of the poster layout, where the various components of the poster can be located to convey different information systems, salience and framing; on a second level, poster authors take advantage of modality to represent scientific truth achieved through the use (absence) of colour and by transforming the poster into a blueprint, so as to pinpoint and generalise the essential qualities of the phenomenon; on a third level, the author introduces visual elements to: (a) describe scientific findings and therefore scientific truth; (b) attract the potential viewer to engage in a reading of the poster. Lastly, the interrelation between the linguistic and visual elements which is thus created can either: create a reading path guiding the reader through the poster by means of interactive strategies offered by the *mode-mixing* pattern (content-oriented posters); or involve the reader in dialogic forms with the author by means of the interactional strategies available through *mode-switching* schemata (reader-oriented posters). Generally, by using one particular mode rather than another, or by using more than one mode simultaneously, speakers signal a specific social identity. The rights and obligations deriving from this social identity are negotiated through the speaker's language *and* mode – whenever there is a choice of language expressed through a particular mode, there will be a choice in the social aspects that the speaker wishes to be associated with.

Table 4 – Framework for the analysis of a multimodal analysis of medical posters

Exploitation of		*Representing*		*Achieved through*	
Information system		Given/New Ideal/Real Centre/Margin		*Left/right* *Top/Bottom* *Triptych* *Labels*	
Salience		Truth value		*Colour (brightness and saturation)* *Title* *Font size*	
Framing		Unity/division		*Lines/empty space* *Poster as blueprint*	
Modality		Scientific truth		*Absence of colour* *Phenomenon generalization* *Phenomenon essential qualities*	
Visuals (objects)	Scientific findings	Conceptual classificational structure	Covert		
			Overt	*Bar-charts, diagrams*	
		Conceptual classificational analytical structure	Unstructured		
			Structured	*Tables*	
			Temporal	*Bar-charts*	
			Exhaustive	Conjoined	*Bar- and pie-charts, maps*
				Compound	*Drawings*
			Inclusive	Dimensional	*Drawings, maps*
			Topographical	Quantitative	*Bar- and pie-charts*
			Topological	*Diagrams, drawings*	
			Spatiotemporal		
		Conceptual classificational symbolic structure	Attributive	*Pictures*	
			Suggestive	*Pictures, drawings*	
Visuals (humans)	Appeal for the reader (yet author's detachment)	Narrative representations	Reactional	*Photos*	
Mode-switching	Dialogic involvement *of* the reader	Stop off relation	Interactional strategy	*Text switches to visuals*	
Mode-mixing	Explanatory relation *with* the reader	Illustrative relation	Interactive strategy	*Texts interrelates with visuals*	

Such preliminary analysis certainly has some limitations, as it has involved the study of only eleven posters, and will surely need further investigation, which may mean modifying the framework created in Table 4. Nevertheless, given the lack of applied linguistic research on this neglected genre, the study offers unique insights into how these different narrative modes rhetorically merge. Indeed, the findings of this pilot study will be checked against the macro-corpus of 532 posters to see whether the results can be confirmed, rejected or modified on a larger study. This seems necessary in order to understand how iconic and verbal languages interact in the construction of scientific communication.

References

AIFA, Ministero Della Salute (2005) "Il Poster Congressuale: Come Prepararlo, Illustrarlo e Renderlo Efficace". *Bollettino d'Informazione sui Farmaci* 5(6), pp. 237-240.

American Heart Association (2011) *Poster Guidelines.* Available at: *http://www.americanheart.org/presenter.jhtml?identifier=10570.*

Barthes R. G. (1977) *Image, Music, Text*. New York, Hill and Wang.

Bezemer J. and Jewitt C. (2010) "Multimodal Analysis: Key Issues" in Litosseliti L. (Eds.), *Research Methods in Linguistics*, pp. 180-197, London, Continuum.

Bracher L., Cantrell J., and Wilkie K. (1998) "The Process of Poster Presentation: A Valuable Experience". *Medical Teacher* 20(6), pp. 552-557.

Brown J.S. and Duguid P. (1991) "Organizational Learning and Communities-of-Practice: Toward a Unified View of Working, Learning and Innovation". *Organization Science* 2(1), pp. 40-57.

Burgess S. and Fagan A. (2004) "Genre Analysis and the Novice Researcher: The Book Review and the Poster Presentation" in Brito M. and Oliva, J.I. (Eds.), *Traditions and Innovations: Commemorating Forty Years of English Studies at Ull (1963-2003)*, pp. 61-77. La Laguna, Rcei.

Dahl T. (2004) "Textual Metadiscourse in Research Articles: A Matter of National Culture or of Academic Discipline?". *Journal of Pragmatics* 36, pp. 1807-1825.

D'Angelo L. (2010) "Creating a Framework for the analysis of Academic Posters" in O'Brien L.J. and Giannoni D.D. (Eds.), *Language Studies Working Papers* 2, pp. 38-50.

De Castro P. (2009) *Librarians of Babel. A Toolkit for Effective Communication.* Oxford, Chandos.

Di Blasio N.W. (2004) "La Comunicazione Congressuale. Il Poster" in De Castro P, Guida S. and Sagone B.M. (Eds.), *Diciamolo Chiaramente*, pp. 229-239. Roma, Il Pensiero Scientifico Editore.

Dogan Bozdag A. (2008) "A New Technique for Presentation of Scientific Works: Video in Poster". *World Journal of Surgery* 32, pp. 1559-1561.

Dubois B.L. (1985a) "Popularization at the Highest Level: Poster Sessions at Biomedical Meetings". *International Journal of the Sociology of Language* 56, pp. 67-84.

Dubois B.L. (1985b) "Poster Sessions at Biomedical Meetings: Design and Presentation". *The Esp Journal* 4, pp. 37-48.

Ellerbee S. (2009) "An Artistic View of Posters". *Trends in Neuroscience* 9(2), pp. 109-110.

Fairclough N. (2006) *Language and Globalization*. London, Routledge.
Gherardi S. (2000) "Practice-Based Theorizing on Learning and Knowing in Organizations". *Organization* 7(2), pp. 211-223.
Gherardi S. (2001) "From Organizational Learning to Practice-Based Knowing". *Human Relations* 54(1), pp. 131-139.
Hay I. and Thomas S.M. (1999) "Making Sense with Posters in Biological Science Education". *Journal of Biological Education* 33(4), pp. 209-214.
Hess G.R., Tosney K.W. and Liegel L.H. (2009) "Creating Effective Poster Presentations: Amee Guide No. 40". *Medical Teacher* 31(4), pp. 356-358.
Huang S.T., Kamel B., et al. (2008) "Scientific Discourse 2.0: Will your Next Poster Session be in Second Life®?". *Embo Reports* 9(6), pp. 496-499.
Kress G. (2010) *Multimodality. A Social Semiotic Approach to Contemporary Communication*. London, Routledge.
Kress G. and van Leeuwen T. (1996) *Reading Images*. London, Routledge.
Macintosh-Murray A. (2007) "Poster Presentations as a Genre in Knowledge Communication: A Case Study of Forms, Norms, and Values". *Science Communication* 28(3), pp. 347-376.
Matthews J.R. and Matthews R.W. (2007) *Successful Scientific Writing*. Cambridge, Cambridge University Press.
Maugh T.H. (1974) "Speaking of Science: Poster Sessions: A New Look at Scientific Meetings". *Science* 184(4144), p.1361.
Miller J.E. (2007) "Preparing and Presenting Effective Research Posters". *Hsr: Health Services Research* 42(1), pp. 311-328
Miracle V.A. (2003) "How to Do an Effective Poster Presentation in the Workplace". *Dimensions of Critical Care Nursing* 22(4), pp. 171-172.
Myers-Scotton C. (1997) "Code-Switching" in Coulmas F. (Eds.), *The Handbook of Sociolinguistics*, pp. 217-237. Oxford, Blackwell.
Pearce E.L.F. (1992) "Proceedings, Iadr Council Meeting. Committee Reports". *Journal of Dental Research* 71(10), pp. 1677-1681.
Purrington C. (2009) *Designing Conference Posters.* Available at: *http://colinpurrington.com/tips/academic/posterdesign.*
Rowe N. and Ilic D. (2009) "What Impact Do Posters Have on Academic Knowledge Transfer? A Pilot Survey on Author Attitudes and Experiences". *BMC Medical Education* 9 (71). Available at: *http://www.biomedcentral.com/1472-6920/9.*
Stoss F. (2010) *Designing Effective Poster Presentations*. Available at: *http://ublib.buffalo.edu/libraries/asl/guides/bio/posters.html.*
Swales J.M. (2004) *Research Genres. Explorations and Applications*. Cambridge, Cambridge University Press.
Swales J.M. and Feak C. (2000) *English in Today's Research Settings*. Cambridge, Cambridge University Press.
Thompson G. (2001) "Interaction in Academic Writing: Learning to Argue with the Reader". *Applied Linguistics* 22, pp. 58-78.
Van Naerssen M. (1984) "Science Conference Poster Presentations in an ESP Program". *The ESP Journal* 3, pp. 47-52.
Wenger E. (2000) "Communities of Practice and Social Learning Systems". *Organization* 7(2), pp. 225-246.
Willet L.L., Paranjape A. and Estrada C. (2008) "Identifying Key Components for an Effective Case Report Poster: An Observational Study". *Journal of General Internal Medicine* 24(3), pp. 393-397.

Wilson L. (1942) *The Academic Man: A Study in the Sociology of a Profession*. New York, Oxford University Press.

Woolsey J.D. (1989) "Combating Poster Fatigue: How to Use Visual Grammar and Analysis to Effect Better Visual Communication". *Trends in Neurosciences* 12(9), pp. 325-332.

Appendix: List of Posters

Alexander V., Passerini A. and Hodzic E. (2011) *New Culture Medium Creates Immune Tolerance between Two Allogeneic Tissue Cells*. Available at: *http://www.eposters.net/index.aspx?ID=3491*.

Bennani Y., Forgione L.A., and Torian L.V. (2005) *HIV Incidence Estimates Using STARHS over the First Four and One-Half Years of Named HIV Reporting in NYC, 2000-2004*. Available at: *http://www.retroconference. org/2005/CD/Sessions/166. htm.*

Cook V. (2008) *Learning to Teach in Medical Settings: The Significance of Work-Based Learning.* Available at: *http://www.ihse.qmul.ac.uk/cme/bscmeded/ poster/index. html.*

Dominguez K., Handelsman E., et al. (2003) *Improvements in the Clinical Status of HIV-Infected Children: a Longitudinal Assessment of the Effects of Advancements in Care*. Available at: *http://www. nyc.gov/html/doh/html/dires/epi_posters.shtml#2002.*

Ferreira de Oliveira F., Figueredo B., et al. (2009) *Epidemiology of Dementia in a Brazilian University Hospital*. Available at: *http://f1000.com/search/posters_beta?query=epidemiology& selectedDomain=all.*

Hanna, D.B., Pfeiffer M.R., et al. (2004) *Predictors of non-HIV-Related Deaths among PWA in New York City, 1999-2003.* Available at: *http:// www.nyc.gov/html/doh/html/dires/epi_posters.shtml#2002.*

Harari R., Marsili D., et al. (2008) *International Cooperation in Environmental Epidemiology: The Case-Study of ISS (Italy) – IFA (Ecuador) cooperation*. Available at: *http://www.iss.it/ binary/epam/cont/2009 POSTER.pdf.*

Malave M.C., Shah D.K., et al. (2006) HIV Partner Elicitation and Notification in New York City: Public Health Does It Better. Available at: *http://www.nyc.gov/html/doh/html/ dires/epi_posters.shtml#2002*.

Manning S.E., Ramaswamy C., et al. (2001) Epidemiologic Data from the First Full Year of Named HIV Surveillance. Available at: *http://www.nyc.gov/html/doh/html/dires/epi_posters. shtml#2002.*

Pfeiffer M.R., Sackoff J.E., et al. (2002) *Rates of Testing for Hepatitis C Virus in HIV-Infected Injection Drug Users and Men Who Have Sex with Men Receiving Medical Care.* Available at: *http://www.nyc.gov/html/doh/html/dires/epi_posters.shtml#2002.*

Vandekerckhove L., Christ F., et al (2005) *LEDGF/p75 is a Co-factor of Lentiviral Integrases and Plays a Role in HIV Replication*. Available at: *http://www.retroconference.org/2005/CD/Abstracts /25233.htm.*

THE BUILDING BLOCKS OF MEDICAL DISCOURSE. A FUNCTION-AND-CORPUS DRIVEN APPROACH TO ESP

Renzo Mocini
Department of Surgical Sciences
"Sapienza" University – Rome

Abstract

This contribution is about the functionality of multi-word lexical items in teaching medical English. Corpus and text studies have shown how much of the language we use consists of multi-word phrases or lexical chunks. Medical English, like all other varieties of ESP, is highly phraseological and draws on a large stock of prefabricated or semi-prefabricated linguistic composites used to fulfil different functions in discourse. Therefore, it is up to the teacher to raise the students' awareness of the lexical nature of the texts being analysed. Medical English learning may best be improved by encouraging students to develop their ability to select lexical chunks that are significant and useful to them. The focus on lexis involves activities targeted at noticing, recording and recycling language items which are typical of medical discourse. An electronic lexical notebook may be a useful tool for storing lexis and working cooperatively.

1. Introduction

Members of scientific communities use a number of discourse practices to communicate the results of their research. Besides books, presentations at conferences and dissertations, this knowledge exchange is mainly realized in the form of journal articles. Since the appearance in 1665 of the first scientific journal in English, the *Philosophical Transactions of the Royal Society*, this genre has undergone continuous evolution. Initially no more than an informative letter written from one scientist to another, the research article has progressively developed to meet the high standards of the present format, which authors employ mostly to convey findings to the scientific community at large. Writing a journal article implies compliance with the textual and linguistic features typical of the genre. Given the considerable importance to the dissemination of scientific knowledge of this kind of written text, it is fundamental for medical students to learn how a research article is linguistically realized if they wish to communicate appropriately within the medical community, especially when English is not their first language.

A consistent body of research has been devoted to the analysis of scientific writing. A number of studies have investigated the macrostructure of the research article and the rhetoric of its individual sections (Swales, 1981, 1990; Hopkins & Dudley-Evans, 1988; Salager-Meyer, 1992, 1994), while others have dealt with different aspects of scientific discourse, such as evaluation (Hunston, 1994), hedging (Hyland, 1998) and its typical lexico-grammatical features (Halliday & Martin, 1993; Biber et al., 1998; Hyland, 2009; Mocini 2013).

As emerges clearly from the vast literature regarding this specific field, the research article has been explored from many and multifaceted perspectives. The present study argues in favour of a phraseological and functional approach to medical language as realized in journal articles, with the dual purpose of identifying the recurrent lexical patterns typically employed to construe the register in question and highlighting their pedagogical implications. Therefore, after dwelling on the theoretical framework underpinning this paper, I shall focus first on the identification and functional classification of some linguistic composites and then, on their usefulness to and application in the teaching of medical English.

2. Theoretical framework

The point of departure of this study is the Systemic Functional Linguistics' multifunctional model of language and the related notion of register. In texts of all kinds, meanings are encoded in language according to the situational context in which and for which they are produced. Therefore, linguistic choices are affected by the field, namely the subject matter being dealt with, by the tenor, the social and discourse relationships, and the attitude of the participants involved in the text and finally by the mode, that is the way in which the message is organized to make sense. Field, tenor and mode are the three contextual variables which determine the kinds of meanings realised in and expressed by a text. In Halliday's terms, ideational meanings are those concerned with the field, interpersonal meanings relate to the tenor and textual meanings refer to the mode (Halliday, 1985/1989). When we deal with the mode of a text we may focus on how it is structured into a coherent whole. The term register indicates «the linguistic features which are typically associated with a configuration of situational features» (Halliday & Hasan, 1976: 22). In other words, the register of a text is the result of the linguistic choices made by writers or speakers on the basis of the three contextual variables. Halliday observes that a register should be defined as «a cluster of associated features having a greater-than-random […] tendency to co-occur» (1988: 162). Against this background, the notion of collocation referred to lexical co-occurrence becomes particularly relevant: words combine with greater than random frequency to form linguistic units of more than one

word which are register-specific. Indeed, each register is recognizable in that it favours types of such multi-word combinations, or phrases[1], chosen to structure and convey its meanings. Sinclair, too, highlights this phraseological nature of language when he states that «the majority of text is made of the occurrence of common words in common patterns, or in slight variants of those common patterns» (1991: 108).

The phraseological component of language has been the focus of numerous studies analysing the strings of words which frequently occur in text (Sinclair & Renouf, 1988; Kjellmer, 1991; Nattinger & DeCarrico, 1992; Altenberg, 1993; Moon, 1994; Sinclair, 1996; Cowie, 1998; Wray, 1999; Tognini-Bonelli, 2001). Some researchers, in particular, have adopted the notion of "lexical bundles" to refer to the most frequently occurring lexical sequences in given registers (Biber et al., 1999, Cortes, 2002; Biber, Conrad & Cortes, 2004; Hyland, 2008; Rica-Peromingo, 2009), while others (Bamberg, 1983; McCulley, 1985, Haswell, 1991) have investigated the importance of formulaic language as a trait of proficient use of a specific register within a specialized discourse community.

3. Data and methodology

Echoing Tognini-Bonelli's *corpus-driven* approach, I define the teaching method proposed here as *function-and-corpus-driven,* since students use the corpus to «advance their hypotheses on the basis of their observations rather than received knowledge, and test them against the evidence provided by the corpus [and though] standard reference categories of linguistic description will be called in, [...] the starting point will be the direct observation of language use» (Tognini-Bonelli, 2001: 14). The role of the teacher will be simply that of empowering the students to spot lexical phrases and recognize the functions they serve in discourse. Following a bottom-up route, it will be the students themselves, in fact, to examine the corpus and pinpoint the patterns typically framing the scientific knowledge conveyed by medical journals.

All the examples provided here were drawn from a corpus compiled by the third and fourth-year students attending the medical degree course at *La Sapienza* University of Rome, between October 2012 and May 2013. The corpus consisted in articles downloaded from a number of important medical-journal databases (PubMed, Embase, Cochrane, etc.).

1. As will be explained in greater detail in section 3, the lexical unit that constitutes the object of this study is referred to as "phrase", as intended by Nattinger & DeCarrico (1992). Other expressions, such as "chunks", "patterns", or "bundles" are also used here to indicate the same form/function composite which, as the title of this paper suggests, represent the "blocks" upon which medical discourse is built.

After the first three lessons which illustrated the course's rationale, the contents of the corpus and practical procedures (such as the use of the e-learning platform, the linguistic software employed and the compilation of the e-notebook), the students themselves selected and converted the files into *.txt* to make them compatible with the software in order to identify phrases and appraise their frequency. Each student added from three to five journal articles to the corpus. To promote motivation, the students were also free to select the specific medical topics most congenial to them. Table 1 below provides the details of the corpus compiled and then investigated:

Table 1 – Corpus details

Tokens	5,987,148
Types	106,647
Type/token ratio	1.18

4. The features of lexical phrases

Medical English, like all other varieties of ESP, is highly phraseological and draws on a large stock of prefabricated or semi-prefabricated linguistic composites used to fulfil different functions in discourse. Therefore, the notion of lexical phrase, defined as a "chunk" of language or «a prefabricated form/function composite» (Nattinger & DeCarrico, 1992) of varying length, appears to play a pivotal role in the description and teaching of specialised languages. In fact, not all word co-occurrences are lexical phrases but only those which perform certain discourse functions. This characterising feature is underlined by Nattinger & DeCarrico when they state that «Prefabricated phrases are collocations if they are chunked sets of lexical items with no particular pragmatic functions; they are lexical phrases if they have such pragmatic function» (1992: 37). From a structural point of view these patterned phrases are positioned on a continuum somewhere between fixed strings of words, which allow no paradigmatic or syntagmatic substitution, to relatively flexible phrases, ranging from short patterns to longer stretches of language. In addition, they may be continuous or discontinuous, consisting either in an unbroken string of words or in a sequence of words interrupted by some lexical filler. The following are all examples taken from medical journal articles[2].

2. All the examples were drawn from medical-journal articles downloaded by myself or my students from some of the most common health-science databases available on line (PubMed, Cochrane, Embase, etc.). All the quotations are numbered in order of appearance, each one followed by a shorthand code indicating the source. Journals bearing a single-word title are referred to using the entire word. Details of the exact sources are provided in the journal-article-reference section at the end of the study.

(1) …melanocyte stem cells located, *for the most part*, in the so-called bulge area (P&R)[3].

Here, the italicised lexical phrase, which is associated with the function of expressing the writer's qualification of the topic under investigation, allows no variability. A phrase like **for the least part* would not be possible. The same fixedness characterises other phrases serving similar or different discourse-level functions, such as *by the same token*, *by and large*, *in sum*, which permit a null substitution. They all consist of an unbroken sequence of words where no paradigmatic or syntagmatic modifications are possible. Conversely, most phrases permit a certain degree of generativity, presenting "slots" which may accommodate different linguistic material according to situation. For example, the following utterance may be selected as a useful framework for the identification of both a particular type of cancer and other conditions:

(2) … *once* colorectal cancer *is suspected*...(BJC).

Here the utterance underlies a discontinuous phrase allowing a set of possible variations on the same pattern *once...is suspected*:

once thyroid cancer *is suspected*
once thyroid dysfunction *is suspected*
once coeliac disease *is suspected*[4].

The slot represented by the three dots is the position filled by an obligatory paradigmatic lexical choice. Other lexical phrases are capable of expansion and substitution at the same time:

(3) ...*with* over 30,000 *(new)*[5] *cases in* the UK annually...(Oncology).

In this case it is easy to recognize a more complex lexical phrase used to discuss the spread of a disease, which acts as a platform for expressing three combined discourse functions, namely quantification, place reference and time reference. In a different context, the number (30,000) may be paradigmatically replaced by another figure, while in place of *the UK* any other place (country, continent, etc.) might be referred to. It should be noted also that this phrasal construction allows for an optional syntagmatic expansion, realized by the adjective *new*, which is not a constitutive part of the basic frame.

Other lexical phrases, such as *with the exception of*, despite being continuous, require a necessary paradigmatic choice at the end of the phrase:

(4) … *with the exception of* acute myocardial infarction…(JACC).

3. Here and elsewhere lexical phrases are in italics.
4. These three examples are not drawn from the journals but proposed by my students.
5. In this and in the following quotations, round brackets signal optional expansions.

Instead, a patterned sequence like *warrant further investigation*, associated with the discourse function of expressing necessity, requires an initial paradigmatic choice and an optional expansion at the end of the phrase (in square brackets):

(5) Our findings *warrant further investigation* [into the role of this molecule in normal mammary gland and breast tumours] (PNAS).

It is also worth noticing that flexible lexical phrases are subject to different degrees of syntactic modification. In the phrase *One possible explanation for...is that*, it is easy to recognize two slots. While the first slot can be filled with a noun phrase, the second admits only full sentences:

(6) *One possible explanation for* this phenomenon *is that* there is variation of heteroplasmy between individual cells that is not adequately reflected by the mean heteroplasmy for a tissue (HG).

(7) *One possible explanation for* these contradictory results *may be* the nature of the IgG isotype produced in each individual (JEM).

5. Taxonomy for lexical chunks

A functional taxonomy may prove useful when deciding what language learners should acquire to become familiar with the discourse used in the medical community. Drawing partially on the classifications adopted by Biber and his colleagues (Biber & Barbieri, 2007; Biber, Conrad & Cortes, 2003, 2004), I suggest a taxonomy which is rooted in the didactic purpose of this study. Up to now researchers have investigated multi-word sequences using a frequency-driven, fixed-word approach. Admittedly, frequency is a valid criterion which provides evidence that writers use them regularly as basic building blocks of discourse. Nevertheless, it has not been ascertained that the most commonly exploited lexical phrases are those that also cater most usefully to medical students' linguistic needs. Some of the most frequent are also very easy to compose even for students at low EL competence level. Conversely, when a chunk plays an important function in discourse, and presents a structure unfamiliar to students, especially when the structure differs in some ways from the equivalent in their native language, or at best, attracts the students' curiosity for some other reason, only then is it worth considering. Furthermore, focusing merely on fixed strings of words may represent a drawback given the pervasiveness of more flexible, non-continuous patterns which are bound to important pragmatic functions. Rather, «it is these dimensions of variation and discontinuity, with their possibility for generativity and framing, that offer the greatest potential for a lexical phrase approach to teaching» (Nattinger & DeCarrico, 1992: 45). With this in mind, it is fundamental to establish a taxonomy of the key

discourse functions present in medical texts, in advance, and then concentrate on their linguistic realizations.

Lexical phrases fall into three broad functional categories which mirror the context of the situation in which the text is embedded: ideational, interpersonal and textual phrases. It is important to notice that the same chunk may serve multiple discourse functions depending on the context in which it occurs. Therefore, there are no distinct boundaries between these groups.

5.a Ideational lexical phrases

This category includes the lexical phrases which are used to identify or introduce an entity and/or specify its attributes. These are very often sentence frames which may be completed in many ways according to the context in which they occur. By "attribute" we mean what is attributed to, classifies or describes an entity. Lexical chunks of this kind are employed to focus on aspects or properties of entities, or to refer to time, place, extent, etc.

Identification

(8) Vascular dysfunction *is recognized as* an integrative marker of CVD (BJN).

(9) Sex differences in investigation results and treatment in subjects *referred for investigation of* chest pain (Heart).

(10) *Earlier diagnosis of* colorectal cancer may be possible using the predictive values for single or multiple symptoms, physical signs or test results (BJC).

(11) From 1980 to 1998, *the average intake of* total fat decreased from 39.0 percent to 29.0 percent (AJE).

(12) *One possible explanation for* the lack of confirmation *may be* the definition of treatment resistance (EC).

Specification of attributes

(13) Two additional *patients matched by* sex, age *and* year of death were selected as controls (Clinics).

(14) We hypothesized that *patients over the age of* 80 can be safely treated with IVT (Neurologist).

(15) Such effects *can never be (entirely) ruled out* (AJGP).

(16) Recent studies are *suggestive of* a substantial genetic contribution to EDs that *deserves further investigation* (BP).

(17) Dietary strategies *aimed at* reduc*ing* blood pressure may also benefit bone health (BJN).

Quantification

(18) *The majority of* patients *with* submaximal or impaired alveolar fluid clearance were male (AJRCCM).

(19) In 2005 there were an estimated 8.8 million new cases of tuberculosis worldwide (BMC).

(20) *In total*, 1391 patients were seen at six microscopy and treatment centres across the FCT between January and December 2003 (PH).

(21) Colorectal cancer is common worldwide, *with (over)* 30000 *(new) cases in* the UK annually (BJC).

Time/place

(22) Thus, in many cases, *the onset of* the syndrome has been classified as spontaneous (SMJ).

(23) The risk of death or heart transplantation could be predicted by risk factors present *at (the time of) diagnosis* (Lancet).

(24) A retrospective review of bariatric procedures performed *from* 2006 *until the end of* 2010 identified 145 patients (CJS).

(25) The primary aim of providing intensive follow-up is to improve survival by detecting postoperative recurrence *at an asymptomatic stage* (EJCT).

(26) There was tenderness with muscle guarding *in the right lower quadrant* (JCP).

5.b Interpersonal lexical phrases

These are used to express the writer's or other people's attitudes in terms of certainty/uncertainty, ability, necessity, possibility or other forms of evaluation (such as relevance, un/expectedness, positivity/negativity, etc.). Some of these phrases act as hedges, expressing a certain degree of tentativeness about what is being asserted. For example expressions with modals like may/might are often used to hedge the effect of an affirmation, or to make an argument more tentative.

Certainty/uncertainty

(27) The viral etiology of myocarditis is difficult to establish *with certainty* in a particular patient (MP).

(28) *It is unlikely that* tau filaments observed in sarkosyl-insoluble preparations were formed after cell lysis (AJP).

Necessity/possibility/ability/hedge

(29) One of the next issues that *need to be addressed* is whether molecular targeted agents might also be effective against biliary tract cancer (Cancers).

(30) *It is possible that* this hyperphosphorylated form can be responsible for the decreased Rb2/p130 functional activity observed in SK-OV3 cells and may contribute to the resistance of these cells to ATRA mediated growth suppression (JCP).

(31) Surveillance methods harnessing search query data *can also be used to* complement traditional and other novel methods (MJ).

(32) However, *this may not matter* for IRs that occur at random or are present for other purposes than cruciformation (CG).

Other evaluations

(33) In addition, *it offers considerable opportunities for* the development of functional foods (JN).

(34) We will also *highlight the importance of* histological analysis when unexpected findings are encountered (BMJ).

5.c Textual lexical phrases

The lexical phrases which fall into this category help facilitate communication. They act as discourse organizers, by relating propositions to each other, establishing relations with other texts or pointing to the structure of the text itself. We identify three functional subcategories:

1. *Text-reflexive lexical phrases*. They point to the text itself, its aims and constitutive parts:

(35) *Against this background*, the present study was undertaken (IPJ).

(36) *The goal of this study was* to assess the quality of surgical therapy in breast and colorectal cancer (IJS).

(37) *We finally look at* the latest work with regards to epidural analgesia and breastfeeding (Anaesthesia).

(38) However, *as suggested by Figure* 1, there was no correlation between adult systolic blood pressure and gestational age in subjects born at term or post-term (IJE).

(39) This was also seen *in the study reported here* (BMC).

2. *Evidential lexical phrases*. They indicate the source of information and are employed to introduce statements or claims, whether subjective or objective in form:

(40) *It is argued that* these must be connected in some way with the genetic health of the population (JME).

(41) *As claimed by* the authors, the reason was that it did not take into account the actual inclination of the shank of the stance leg at the beginning of the stride (Sensors).

(42) Multiplanar imaging studies *provide valuable information about* the spatial relationship and distance of the muscle (CEO).

(43) *There is currently no evidence to suggest that* treating depression in early or late life reduces the incidence of dementia (TCRM).

(44) *To our knowledge*, this is the first open study to evaluate the efficacy of MTX in addition to etanercept in a two step strategy (ARD).

3. *Connecting lexical phrases*. They help readers to interpret connections between ideas or facts. We recognize some important functions, such as contrasting, comparing, inferencing, adding, explaining, expanding:

(45) The bronchial epithelium upregulates the expression of a wide range of adhesion molecules, *as well as* a host of pro-inflammatory cytokines and chemokines relevant to the ongoing inflammatory response of asthma (Thorax).

(46) In the total group of dyspeptic patients in primary care, H pylori testing has no value *in addition to* history taking for diagnosing peptic ulcer disease (BMJ).

(47) Treatment groups were *compared for* baseline characteristics with analysis of variance and the Cochran-Mantel-Haenszel test, controlling for infarct location (JACC).

(48) Study finds *no association between* autism and vaccination (BMJ).

This latter category also includes lexical chunks which delimit the conditions of an argument, such as:

(49) Randomised trials were otherwise included *irrespective of* participants' age, disease status, blood pressure before treatment, or use of other drugs (BMJ).

(50) We found that, *with the exception of* Obsessive-Compulsive PD, the PD prototypes as reported by both self and informant were significantly correlated with ratings based on the SIDP interview (PD).

6. Recognition, registration and revision

Lexical patterns like those illustrated above, play a pivotal role in the construction of medical discourse, shaping textual meaning and «contribut[ing] to our sense of distinctiveness in a register» (Hyland, 2008: 42). But simple exposure to phrases is not sufficient to enable students to master and reproduce them appropriately. As Cortes points out in her study about lexical bundles in academic writing, «even though students might have frequently encountered these expressions in their academic reading, simple exposure to the frequent use of lexical bundles in published academic writing does not result in the acquisition of these expressions by university students» (Cortes, 2004: 417). Students should be trained to reproduce the linguistic patterns that professional writers have chosen to convey the register typical of a given text genre used in a professional setting. In order to develop this pragmatic skill, some targeted activities are essential.

Extensive reading is fundamental for effective production. A number of researchers (Spack, 1997; Belcher & Connor, 2001; Hirvela, 2004) have

highlighted the pedagogical connection between reading and writing, with the dual role of facilitating comprehension and fostering effective writing. The interconnected nature of the two activities is emphasized by Hirvela who stresses the fact that «when reading and writing in academic settings, students are primarily engaged in composing from sources […]; that is, their writing is usually based on some type of reading» (2004: 140). Through extensive reading and pedagogical "chunking"[6] of texts, students become sensitised to the phraseological nature of language and «gradually develop ways, not of assembling parts into wholes, but of identifying constituent bits within the whole» (Lewis, 1993: 195). This implies that the main purpose of the teaching activities relating to the present topic is to raise learners' awareness of lexical phrases and the functions they perform in discourse. Indeed, the more students engage with or manipulate these patterned phrases, the more likely they are to retain them and re-use them creatively. By naming the pragmatic function carried out by each kind of lexical phrase, students should become more mindful of the importance of multi-word units, and at the same time, gain in-depth awareness of them. As Schmidt posits, «those who notice most, learn most» (1990: 144). With time, learners will discover that by manipulating the basic pattern provided by a lexical phrase, it is possible to shape new meanings in different situational contexts simply by replacing some flexible components with other slot-fillers. The argument behind this assertion is well summarised by Francis who explains the fundamental role played by phraseology in communication: «As communicators we do not proceed by selecting syntactic structures and independently choosing lexis to slot into them. Instead we have concepts to convey and communicative choices to make which require central lexical items, and these choices find themselves syntactic structures in which they can be said comfortably and grammatically» (Francis, 1993: 122). Once students have assimilated a lexical phrase, they can re-adapt it by making some necessary changes and then re-utilise it in the production of novel creations. By the same token, students can produce complex linguistic structures which may be otherwise difficult to create by applying the rules of syntax alone, «a fact which should ease frustration and at the same time promote motivation» (Natting & DeCarrico, 1992: 114).

As is clear from what has been stated above, simple exposure does not result in language acquisition. Whenever lexical phrases are identified in the texts that students analyse in class or alone, it is important to record and revise them in some way. One possible tool might be the electronic lexical notebook (or e-notebook) provided by the Moodle platform[7] which I exploited with a

6. Here the word "chunking" refers to the activity of segmenting the text being dealt with into chunks of language, or lexical phrases, performing important functions in discourse.

7. Moodle is a Course Management System (CMS), also known as a Learning Management System (LMS) or a Virtual Learning Environment (VLE). It is a free web application that educators can use to create effective online learning sites (*https: //moodle.org/*).

group of my students between 2012 and 2013. Thanks to this resource, the students were not only able to register useful or interesting ready-made form/function composites with their relative equivalents in Italian but also revise them regularly and, more importantly, retrieve them when they sought to create texts of their own (abstracts, reports, presentations, etc.). The work-in-progress glossary created by the students on the platform was open-ended since they continuously entered new lexical phrases to increase the overall size of the linguistic pool. In order for the e-notebook to be representative, not all lexical phrases were included but only those whose frequency showed that they were actually typical of the register in question and not just a matter of individual style. For this reason, by exploiting the articles consulted, the students compiled a corpus of authentic journal articles downloaded from some of the world's main health-science databases for a total of nearly six million tokens.

As a criterion for the inclusion of lexical phrases into the e-notebook, as suggested by Biber et al. (1999: 994), an occurrence cut-off of no less than 10 times per million words in at least 10 different articles was decided on. This kind of information was easily accessed by searching the corpus with concordancing programs such as Mike Scott's WordSmith Tools 5.0 (2008)[8] or Lawrence Anthony's AntConc (2012)[9] (the latter may be downloaded free of charge). Students are enthusiastic when they see that their lexical intuitions are confirmed through actual usage.

As is often the case, the corpus represented a powerful heuristic tool especially when the students' lexical interest was sparked not so much by a ready-made phrase as by the behaviour of a single lexical item encountered several times, as shown by the two activities described in section 7. In this instance, the investigation of the corpus began with a search word which produced a list of occurrences to be scanned for concordance. The students were thus "driven" by the cumulative effect of the occurrences displayed to formulate their hypotheses and identify both contiguous and non-contiguous lexical phrases associated with important medical discourse functions.

For the sake of clarity, let us sum up the six-steps of the *function-and-corpus driven* approach illustrated above:

- step 1: compilation of an open-ended corpus;
- step 2: in-depth reading to detect suitable items;
- step 3: investigation of the corpus to formulate hypotheses and/or confirm intuitions;
- step 4: labelling of functions;
- step 5: checking frequency;
- step 6: compiling an e-notebook.

8. Downloadable at *http: //www.lexically.net/wordsmith/index.html.*
9. Downloadable at *http: //www.antlab.sci.waseda.ac.jp/antconc_index.html.*

7. Sample activities

The following examples are meant to provide a taste of the serendipitous activities that the learners carried out by applying the *function-and-corpus driven* approach.

A group of students realized that the verb "present", especially in the past form "presented" was extensively employed by journal article writers with the meaning of "turn up", "arrive". In particular, what struck them was the fact that none of the ordinary dictionaries they consulted included this particular meaning for the word in question. With the help of one of the two concordancers mentioned above they interrogated the reference corpus. Their analysis of the co-text of the word investigated suggested an underlying three-slot pattern:

[ ] *presented to* [ ] *with* [ ]

The first slot was mainly filled with the noun "patient/s" or other general noun phrases (a man/a woman, often with the specification of age, e.g.: a 43-year-old woman). The second slot accommodated a place reference (namely hospital/clinic/emergency department, etc.) while the final slot was filled with the lexicalization of the reason for the patient's presentation, mostly symptoms:

(51) A 68-year-old woman *presented to* the emergency department *with* fever, chills, nausea and vomiting (CRID).

(52) In this case, the patient *presented to* the emergency department (ER) *with* abdominal pain (BMJ-CR).

(53) The patient *presented to* Loyola University Medical Center *with* worsening right upper quadrant pain and fever (BMCID).

Another example is that where the students were attracted by the linguistic behaviour of the verb "diagnose" used to convey the notion that a particular illness or problem has been identified. Their interest stemmed mainly from the different pattern in which that word occurs in their native language[10]. The occurrence analysis revealed two frequent patterns:

(54) The survival rates of patients *diagnosed with* retinoblastoma have increased significantly, from 70% in 1970 to 95% in 2008 (CO).

(55) A 49-year-old Guinean male was *diagnosed with* hepatitis C, genotype II in 2007 (EPB).

(56) Because most patients *diagnosed as having* an apparent PNS will not have known cancer at the time, screening for an underlying tumor is indicated (MCP).

10. Examples of common patterns in Italian are: Il paziente *a cui è stata diagnosticata*… [a disease]/[a disease]… *è stata diagnosticata in* un paziente, and the like.

(57) The child was *diagnosed as having* vitamin B12 and iron deficiency due to nutritional inadequacy and was immediately treated with packed red blood cells, intramuscular vitamin B12 injections, and iron supplementation (BMCP).

As a result, the students discovered the following two-slot phrases associated with the attribute-specifying function, as per section 5.a above:

[ ] (verb *be*) + *diagnosed with* [ ]

[ ] (verb *be*) + *diagnosed as having* [ ]

They noticed that while the first slot accommodated the noun phrase expressing the people who are diagnosed, the second was filled with the noun phrase conveying the disease or condition.

The important point in terms of didactics is not so much the phrases as such as the discovery made by the students as investigators of texts. Their sense of wonder and gratification was an amazing boost to motivation and retention of the data thus acquired.

Once the students had identified the phrases they were invited to check for frequency. The outcome was a rate of 85 occurrences for *…presented to... with*, 274 for (*be*) + *diagnosed with.* and 62 for (*be*) *diagnosed as having*, all of them occurring in far more than ten different texts, which exceeded the agreed occurrence cut-off. The students concluded that those lexical phrases were well worth including in the e-notebook as significant instances of the medical register.

8. Conclusions

Halliday claims that, «a great deal of discourse is more or less routinised» (1978: 4). In the field of medicine, researchers communicate their findings by drawing on a disciplinary store, namely a repertoire of multi-word patterns which are used as basic building blocks of medical texts since they fulfil a set of discourse functions. Thus, «Gaining control of a new register therefore requires a sensitivity to expert users' preferences for certain sequences of words over others that might seem equally possible» (Hyland, 2008: 5).

Most studies on multi-word combinations have dealt with the production of native speakers of English: very few have focused on the use of lexical phrases by non-native speakers, as in the case of this study. To investigate and use these phraseological chunks productively I have placed emphasis on a pedagogically oriented functional taxonomy which diverges significantly from the classifications of lexical bundles identified previously in the literature of the field (Cortes 2002, 2004; Biber, Conrad & Cortes, 2003). The main difference lies in the great importance attached not only to fixed

and continuous phrases but also to non-continuous lexical phrases which allow for a considerable amount of lexical variation.

On the basis of the experience illustrated here, it appears that it is the semantic compositionality and generativity of the phrases themselves that provide the greatest potential for a teaching approach based on the lexical phrases which shape the register of medical journals. The criterion of selection applied at *La Sapienza* University was also different from that of previous works, in that it favoured students' needs rather than frequency.

The lexical phrases identified in journals may become the raw data for creative language production in this particular sector of ESP. I was positively surprised at the improvement in my students' writing skills. The entry test had shown that most of the students possessed hardly any of the medical expressions found in journals, whereas the written activities held at mid-term and the end of the course revealed that they had acquired and could use a fairly rich stock of multi-word items, something which seemed to corroborate Lewis's intuition that «learners acquire most efficiently by learning wholes which they later break into parts, for later novel re-assembly, rather than by learning parts and then facing a completely new task, building those parts into wholes» (Lewis, 1997: 190).

References

Altenberg B. (1993) "Recurrent Word Combinations in Spoken English" in D'Arcy J. (ed.), *Proceedings of the Fifth Nordic Association for English Studies Conference*. Reykjavik, University of Iceland.

Anthony L. (2012) *AntConc* 3(3), 4, Tokyo. Available at *http: //www.antlab.sci.waseda.ac.jp/antconc_index.html.*

Bamberg B. (1983), "What Makes a Text Coherent?". *College Composition and Communication* 34(4), pp. 417-429.

Belcher D. and Connor U. (2001) *Reflections on Multiliterate Lives*. Clevedon, Multilingual Matters.

Biber D. and Barbieri F. (2007) "Lexical Bundles in University Spoken and Written Registers". *English for Specific Purposes* 26, pp. 263-286.

Biber D., Conrad S. and Reppen R. (1998) *Corpus Linguistics. Investigating Language Structure and Use*. Cambridge, Cambridge University Press.

Biber D., Johansson S., et al. (1999) *The Longman Grammar of Spoken and Written English*. Harlow, Pearson.

Biber D., Conrad S. and Cortes V. (2003) "Lexical Bundles in Speech and Writing: an Initial Taxonomy" in Wilson A. et al. (Eds.), *Corpus Linguistics by the Lune: A Festschrift for Geoffrey Leech*. Frankfurt, Peter Lang.

Biber D., Conrad S. and Cortes V. (2004) "If you Look at …Lexical Bundles in University Lectures and Textbooks". *Applied Linguistics* 25, pp. 371-405.

Cortes V. (2002) *Lexical Bundles in Academic Writing in History and Biology, Unpublished Doctoral Dissertation*. Northern Arizona University, Arizona.

Cortes V. (2004) "Lexical Bundles in Published and Student Disciplinary Writing: Examples from History and Biology". *English for Specific Purposes* 23, pp. 397-423.

Cowie A.P. (1998) *Phraseology: Theory, Analysis and Applications. Oxford Studies in Lexicography and Lexicology*. Oxford, Clarendon Press.
Francis G. (1993) "A Corpus-Driven Approach to Grammar" in Baker M. et al. (Eds.). *Text and Technology*. Amsterdam, Benjamins, pp. 137-156.
Halliday M.A.K. and Hasan R. (1976/1993) *Cohesion in English*. London and New York, Longman.
Halliday M.A.K. (1978) *Language as a Social Semiotic: The Social Interpretation of Language and Meaning*. London, Edward Arnold.
Halliday M.A.K. (1985/89), "Part A" in Halliday M.A.K. and Hasan R. *Language, Context, and Text: Aspects of Language in a Social-Semiotic Perspective*. Oxford/ Geelong, OUP/Deakin University Press.
Halliday M.A.K. (1988) "On the Language of Physical Science" in Ghadessy M. (Eds.). *Registers of Written English*. London, Pinter.
Halliday M.A.K. (1993) "Some Grammatical Problems in Scientific English" in Halliday M.A.K. and Martin J.R. (Eds.), *Writing Science: Literacy and Discursive Power*. Pittsburgh, University of Pittsburgh Press.
Halliday M.A.K. and Martin J.R. (1993),*Writing Science: Literary and Discursive Power*. London/Washington DC, the Falmer Press.
Haswell R. (1991) *Gaining Ground in College Writing: Tales of Development and Interpretation*. Dallas, Southern Methodist University Press.
Hirvela A. (2004) *Connecting Reading and Writing*. Michigan, University of Michigan Press.
Hunston S. (1994) "Evaluation and Organization in a Sample of Written Academic Discourse" in Coulthard M. (Eds.), *Advances in Written Text Analysis*. London, Routledge, pp. 191-218.
Hyland K, (1991) "A Genre Description of the Argumentative Essay". *RELC Journal* 21, 1, 66-79.
Hyland K. (1998) *Hedging in Scientific Research Articles*. Amsterdam, John Benjamins.
Hyland K. (2008) "As Can Be Seen: Lexical Bundles and Disciplinary Variation". *English for Specific Purposes* 27, pp. 4-21.
Hyland K. (2009) *Academic Discourse*. London, Continuum.
Hopkins A. and Dudley-Evans A. (1988) "A Genre-Based Investigation of the Discussion Sections in Articles and Dissertations". *English for Specific Purposes* 7, pp. 113-122.
Kjellmer G. (1991) "A Mint of Phrases" in Aijmer K. and Altenberg B. *English corpus linguistics.* New York, Longman, pp. 111-127.
Lewis M. (1993) *The Lexical Approach. The State of ELT and a Way Forward.* Hove, England, Language Teaching Publications.
Lewis M. (1997) *Implementing the Lexical Approach*. London, Language Teaching Publications.
McCulley G. (1985) "Writing Quality, Coherence, and Cohesion". *Research in the Teaching of English* 19(3), pp. 269-282.
Mocini R. (2013) "Communicating Findings. A Functional Analysis of a Medical Research Article". AION – Annali del Dipartimento di Studi Letterari, Linguistici e Comparati. Sezione Linguistica 2, pp. 143-172.
Moon R. (1994) "The Analysis of Fixed Expressions in Text" in Coulthard M. (Eds.). *Advances in Written Text Analysis*. London, Routledge, pp. 117-135.
Nattinger J. and DeCarrico J. (1992) *Lexical Phrases and Language Teaching*. Oxford, Oxford University Press.
Rica-Peromingo J.P. (2009) "The Use of Lexical Bundles in the Written Production of Spanish EFL University Students". *Applied Linguistics for Specialized Discourse. Conference Proceedings*, Riga, University of Latvia Publishing, pp. 1-7.

Salager-Meyer F. (1992) “A Text-Type and Move Analysis of Verb Tense and Modality Distribution in Medical English Abstracts”. *English for Specific Purposes* 11(2), pp. 93-115.
Salager-Meyer F. (1994) “Hedges and Textual Communicative Function in Medical English Written Discourse”. *English for Specific Purposes* 13(2), pp. 149-171.
Schmidt R.W. (1990) “The Role of Consciousness in Second Language Learning”, *Applied Linguistics* 11(2), pp. 129-158.
Scott M. (2008) *WordSmith Tools 5.0*, Liverpool. Available at *http: //www.lexically.net/ wordsmith/index.html.*
Sinclair J. and Renouf A. (1988) “A Lexical Syllabus for Language Learning” in Carter R. and McCarthy M. (Eds.), *Vocabulary and Language Teaching*. Harlow, Longman, pp. 140-160.
Sinclair J. (1991) *Corpus, Concordance, Collocation*. Oxford, Oxford University Press.
Sinclair J. (1996) “The Search for Units of Meaning”. *TEXTUS* 9(1), pp. 75-106.
Spack R. (1997) “The Acquisition of Academic Literacy in a Second Language: a Longitudinal Case Study”. *Written Communication* 14(1), pp. 3-6.
Swales J.M. (1981) *Aspects of Article Introductions*. Birmingham, the University of Aston, Language Studies Unit.
Swales J.M. (1990) *Genre Analysis*. Cambridge, Cambridge University Press.
Tognini-Bonelli E. (2001) *Corpus Linguistics at Work*. Amsterdam, John Benjamins.
Williams I.A. (2011) “Factors Affecting Discourse Structure and Style” in Olsztynska S. (Eds.), *Biomedical Discussion Sections, Biomedical Engineering, Trends, Research and Technologies*. Available at: *http: //www.intechopen.com/books/biomedical-engineering-trends-research-and-technologies/factors-affecting-discourse-structure-and-style-in-biomedical-discussion-sections.*
Wray A. (1999) “Formulaic Language in Learners and Native Speakers”. *Language Teaching* 32(4), pp. 213-231.

Journal-article references

Abdi Z., Krasnokutsky S., et al. (2010) “Hepatectomy for Hepatocellular Carcinoma Complicated by Vasculitis Flare”. *HPB Surgery* 2012 (online), pp. 1-4.
Abela J., Sciberras J., et al. (2004) “Omental Actinomycosis Presenting with Right Lower Quadrant Abdominal Pain”. *Journal of Clinical Pathology* 57(6), pp. 670-672.
Afeiadou K., Weech M., et al. (2012), “A Review of the Evidence for the Effects of Total Dietary Fat, Saturated, Monounsaturated and N-6 Polyunsaturated Fatty Acids on Vascular Function, Endothelial Progenitor Cells and Microparticles”. *British Journal of Nutrition* 107(3), pp. 303-324.
Agrawal S. and Banerjee A. (2010) “Perception of Violence Against Women Among Future Health Professionals in an Industrial Township”. *Industrial Psychiatry Journal* 19(2), pp. 90-93.
Arkenau H.-T., Brunetto A.T., et al. (2009) “Clinical Benefit of New Targeted Agents in Phase I Trials in Patients with Advanced Colorectal Cancer”. *Oncology* 76, pp. 151-156.
Aziz H.A., LaSenna C.E., et al. (2012) “Retinoblastoma Treatment Burden and Economic Cost: Impact of Age at Diagnosis and Selection of Primary Therapy”. *Clinical Ophthalmology* 6, pp. 1601-1606.
Bandukwala H.S., Clay B.S., et al. (2007) “Signaling Through FcγRIII is Required for Optimal T Helper Type (Th)2 Responses and Th2-Mediated Airway Inflammation”. *Journal of Experimental Medicine* 204(8), pp. 1875-1889.

Bassey E.B., Momoh M.A., et al. (2005) "The Trend of Pulmonary Tuberculosis in Patients Seen at DOTS Clinics in the Federal Capital Territory, Abuja, Nigeria". *Public Health* 119(5), pp. 405-408.

Boudreau A., Tanner K., et al. (2013) "3σ Stabilizes a Complex of Soluble Actin and Intermediate Filament to Enable Breast Tumor Invasion". *Proceedings of the National Academy of Sciences* 110(41), pp. 3937-3944.

Bricola S.A.P., Paiva E.F., et al. (2013) "Fatal Pulmonary Embolism in Hospitalized Patients: A Large Autopsy-Based Matched Case-Control Study". *Clinics* 68(5), pp. 679-685.

Cantor L.B. (2006) "Brimonidine in the Treatment of Glaucoma and Ocular Hypertension". *Therapeutics and Clinical Risk Management* 2(4), pp. 337-346.

Cashman K.D. (2007) "Diet, Nutrition and Bone Health". *Journal of Nutrition* 137(11), pp. 2507-2512.

Chadwick R.F. (1993) "What Counts as Success in Genetic Counseling?". *Journal of Medical Ethics* 19(1), pp. 43-49.

Chapman B., Duberstein P., et al. (2012) "Cognitive Function over Seven Years in Older Persons". *American Journal of Geriatric Psychiatry* 20(7), pp. 612-621.

Christou N.V. (2011) "Laparoscopic Gastric Bypass Can Be Performed Safely in Secondary Health Care Centres with Dedicated Service Corridor to an Affiliated Tertiary Health Care Centre". *Canadian Journal of Surgery* 54, pp. 58-104.

Cioc A.M. and Nuovo G.J. (2002) "Histologic and In Situ Viral Findings in the Myocardium in Cases of Sudden, Unexpected Death". *Modern Pathology* 15(9), pp. 914-922.

Cohen J.D., Zaltni S., et al. (2004) "Secondary Addition of Methotrexate to Partial Responders to Etanercept Alone is Effective in Severe Rheumatoid Arthritis". *Annals Rheumatic Diseases* 63, pp. 209-219.

Dalziel S.R., Parag V., et al. (2007) "Cardiovascular Risk Factors at Age 30, Following Pre-Term Birth". *International Journal of Epidemiology* 36(4), pp. 907-915.

Davies D.E., Djukanović R. and Holgate S.T. (1999) "Application of Functional Genomics to Study of Inflammatory Airways Disease". *Thorax* 54, pp. 79-81.

DeTure M., Ko L., et al. (2002) "Inducible Transfectants Expressing Wild-Type or FTDP-17 tau". *American Journal of Pathology* 161(5), pp. 1711-1722.

Doyle L. and Cashman K.D. (2003) "The Effect of Nutrient Profiles of the Dietary Approaches to Stop Hypertension (DASH) Diets on Blood Pressure and Bone Metabolism and Composition in Normotensive and Hypertensive Rats". *British Journal of Nutrition* 89, pp. 713-724.

DuPrey K.M., McCrea L., et al. (2012) "Pyelonephritis and Bacteremia from Lactobacillus delbrueckii". *Case Reports in Infectious Diseases* 2012 (online), pp. 1-3.

Fields A.L., Soprano D.R. and Soprano K.J. (2008) "Characterization of Alterations of Rb2/P130 Tumor Suppressor in All-Trans-Retinoic Acid Resistant Sk-Ov3 Ovarian Carcinoma Cells". *Journal of Clinical Pathology* 217(1), pp. 77-85.

French J.A. (2006) "Refractory Epilepsy: One Size Does Not Fit All". *Epilepsy Currents* 6(6), pp. 177-180.

Furuse J. and Okusaka T. (2011) "Targeted Therapy for Biliary Tract Cancer". *Cancers* 3, pp. 2244.

Guez S., Chiarelli G., et al. (2012) "Severe Vitamin B12 Deficiency in an Exclusively Breastfed 5-Month-Old Italian Infant Born to a Mother Receiving Multivitamin Supplementation During Pregnancy". *BMC Pediatrics* 12, pp. 1-5.

Hamburger J., Gijsbers G., et al. (1997) "Recanalization of Chronic Total Coronary Occlusions Using a Laser Guide Wire: A Pilot Study". *Journal of American College of Cardiology* 30(3), pp. 649-656.

Hamilton W., Round A., et al. (2005) “Clinical Features of Colorectal Cancer before Diagnosis: a Population-Based Case-Control Study”. *British Journal of Cancer* 93(4), pp. 399-405.

Hamilton W., Round A., et al. (2005) “Clinical Features of Colorectal Cancer before Diagnosis: A Population-Based Case-Control Study”. *British Journal of Cancer* 93(4), pp. 399-405.

Hamilton W., Round A., et al. (2005) “Clinical Features of Colorectal Cancer Before Diagnosis: A Population-Based Case-Control Study”. *British Journal of Cancer* 93(4), pp. 399-405.

Hasan Al Qahtani N. (2012) “Spontaneous Intraperitoneal Haemorrhage During Pregnancy”. *British Medical Journal-Case Reports* 2012 (online), pp. 1-3.

Hayashi S., Maruoka S., et al. (2014) “Carotidynia After Anticancer Chemotherapy”. *Singapore Medical Journal* 55(9), pp. 142-144.

Herman K., Lesniak T., et al. (2001) “Surgeon Related Quality in Colorectal and Breast Cancer Surgery”. *The Internet Journal of Surgery* 3(1), pp. 1-5.

Hooker B. (2013) “Study Finds No Association Between Autism and Vaccination”. *British Medical Journal* 3, p. 346.

Hudson M., Greenbaum A., et al. (2010) “Adjunctive Transcutaneous Ultrasound With Thrombolysis”. *Journal of the American College of Cardiology* 3(3), pp. 352-259.

Hwang S.H., Park C.S., et al. (2013) “Anatomical Analysis of Intraorbital Structures Regarding Sinus Surgery Using Multiplanar Reconstruction of Computed Tomography Scans”. *Clinical and Experimental Otorhinolaryngology* 6(1), pp. 23-29.

Lancashire R., Sharp D., et al. (2009) “The Risk of Colorectal Cancer with Symptoms at Different Ages and Between the Sexes: A Case-Control Study”. *BMC Medicine* 7, pp. 1-9.

Law M.R., Morris J.K. and Wald N.J. (2009) “Use of Blood Pressure Lowering Drugs in the Prevention of Cardiovascular Disease: Meta-Analysis of 147 Randomised Trials in the Context Of Expectations from Prospective Epidemiological Studies”. *British Medical Journal* 338, 2012 (online), 1-3.

Lawton E.M., Shields A.J. and Oltmanns T.F. (2011) “Five-Factor Model Personality Disorder Prototypes in a Community Sample: Self- and Informant-Reports Predicting Interview-Based DSM Diagnoses”. *Personality Disorders: Theory, Research, and Treatment* 2(4), pp. 279-292.

Lipshultz S.E. Orav E.J., et al. (2013) “Risk Stratification at Diagnosis for Children with Hypertrophic Cardiomyopathy: an Analysis of Data from the Pediatric Cardiomyopathy Registry”. *The Lancet* 382, pp. 1889-1897.

López A.M., Álvarez D., et al. (2012) “Slope Estimation During Normal Walking Using a Shank-Mounted Inertial Sensor”. *Sensors* 12, pp. 11910-11921.

Loubert C., Hinova A. and Fernando R. (2011) “Update on Modern Neuraxial Analgesia in Labour: A Review of the Literature of the Last 5 Years”. *Anaesthesia* 66, pp. 191-212.

Matthews P.M., Brown R., et al. (1995) “Intracellular Heteroplasmy for Disease-Associated Point Mutations in mtDNA: Implications for Disease Expression and Evidence for Mitotic Segregation of Heteroplasmic Units of mtDNA”. *Human Genetics* 96(3), pp. 261-268.

Ocampo A.J., Chunara R. and Brownstein J.S. (2013) “Using Search Queries for Malaria Surveillance”. *Malaria Journal* 12, pp. 1-6.

Oh K., Hu F.B., et al. (2005) “Dietary Fat Intake and Risk of Coronary Heart Disease in Women: 20 Years of Follow-up of the Nurses’ Health Study”. *American Journal of Epidemiology* 161(7), pp. 672-679.

Ozeki N., Fukui T., et al. (2013) "Significance of the Serum Carcinoembryonic Antigen Level During the Follow-up of Patients with Completely Resected Non-Small-Cell Lung Cancer". *European Journal of Cardio-Thoracic Surgery*, pp. 1-6.

Patrick N., Iskander M., et al. (2012) "A Right Inguinoscrotal Swelling: The Importance of Histological Analysis". *British Medical Journal – Case Reports* 2012 (online), 1-3.

Pelosof L.C. and Gerber D.E. (2010) "Paraneoplastic Syndromes: An Approach to Diagnosis and Treatment". *Mayo Clinic Proceedings* 85(9), pp. 838-854.

Rossi A., Gerardi M., et al. (2013) "Alopecia Areata and Hypertrichosis: A Case Report". *Prevention and Research* 3(3), pp. 239-246.

Stevenson C.R., Forouhi N.G., et al. (2007) "Diabetes and Tuberculosis: the Impact of the Diabetes Epidemic on Tuberculosis Incidence". *BMC Public Health* 7, pp. 1-8.

Strawbridge E.M., Benson G., et al. (2010) "The Distribution of Inverted Repeat Sequences in the Saccharomyces Cerevisiae Genome". *Current Genetics* 56, pp. 321-340.

VanderHeyden T.R., Yong S.L., et al. (2012) "Granulomatous Hepatitis Due to Bartonella Henselae Infection in an Immunocompetent Patient". *BMC Infectious Diseases* 12(17), pp. 1-7.

Vitiello B. and Lederhendler I. (2000) "Research on Eating Disorders: Current Status and Future Prospects". *Biological Psychiatry* 47(9), pp. 777-786.

Ware L.B. and Matthay A.M. (2001) "Alveolar Fluid Clearance Is Impaired in the Majority of Patients with Acute Lung Injury and the Acute Respiratory Distress Syndrome". *American Journal of Respiratory and Critical Care Medicine* 163, pp. 1376-1383.

Weijnen C.F., Numans M.E., et al. (2001) "Testing for Helicobacter pylori in Dyspeptic Patients Suspected of Peptic Ulcer Disease in Primary Care: Cross Sectional Study". *British Medical Journal* 323(7304), pp. 71-75.

Willey J.Z., Petersen N., et al. (2012) "Safety of Thrombolysis in Patients over the Age of 80". *Neurologist* 18(2), pp. 99-101.

Wong Y., Rodwell A., et al. (2001) "Sex Differences in Investigation Results and Treatment in Subjects Referred for Investigation of Chest Pain". *Heart* 85(2), pp. 149-152.

MEDICAL ACADEMIC SPEECH. A CORPUS-BASED INVESTIGATION OF SAME-SPEAKER MOST FREQUENT CONTENT KEY WORD REPETITION IN NON-NATIVE ENGLISH DISCOURSE

Barbara Cappuzzo
Department of Psychology and Educational Sciences
University of Palermo

Abstract

Studies on repetition in ELF interactions have been carried out in several domains, but medical academic discourse still remains under-researched. This paper explores same-speaker repetition in a 31,153-word corpus of lectures included in the 100,135-word medical section of the 1 million-word ELFA (English as a Lingua Franca in Academic Settings) corpus. More specifically, the corpus was searched for the most frequent same-speaker content key word repetition and corresponding functions, with both immediate and delayed repetition being scrutinized. The results confirmed the initial hypothesis according to which same-speaker repetition was expected to be pervasive in the data, not only as a result of the pedagogical nature of the encounters but also as a possible consequence of the ELF linguistic context. To this purpose, the data in the ELFA medical corpus were compared to those explored in a corpus of medical lectures from the NS (Native Speaker) BASE (British Academic Corpus of Spoken English) corpus. Most frequent same-speaker content key word repetition occurred in the ELFA data twice and a half as much as in the BASE data on average considering relative frequencies. No differences were found as for repetition use, which mostly displayed explicating and emphasizing functions in both corpora.

Occurrence of extra repetition in the ELFA data as compared to the BASE data shows the need for high levels of clarity in communicative contexts where interactions take place between speakers of different linguistic and cultural backgrounds.

1. Introduction

It is widely acknowledged that nowadays English is the lingua franca of international communication in both general and professional interaction, and that the number of non-native English speakers has outnumbered that of native speakers (Crystal 2003).

The dominant position of English as the most used language worldwide is particularly evident in academia, «one of the domains which have most eagerly adopted English as their common language in international

communication» (Mauranen 2006a: 146). Graddol (1997: 45) explains the phenomenon of the growing number of courses in universities where English is the language used:

> The need to teach some subjects in English, rather than the national language, is well understood: in the sciences, for example, up-to-date text books and research articles are obtainable much more easily in one of the world languages and most readily of all in English.

Serving universities the dual function of teaching and researching institutions, «a powerful impact is exerted by the language of academic publication» (Coleman 2006: 5). From the increasing use of English as the medium of instruction in international higher education stems the largest project on ELF (English as a Lingua Franca) usage in academic contexts, that is the 1 million-word ELFA (English as a Lingua Franca in Academic Settings) corpus of transcribed spoken academic ELF interactions in several disciplinary domains. ELFA, led by Mauranen at the University of Helsinki, was created with the goal of understanding «how academic discourses work at time when so much of teaching and research is carried out in different countries using English as a lingua franca» (Mauranen 2006a: 147). Several publications were generated based on the ELFA corpus from 2001 to 2014. To mention only some of the latest ones, studies were carried out on organizing formulaic chunks in spoken and written academic ELF (Carey 2013), narrative elements in conference presentations (Mauranen 2013), aspects of lingua franca discourse in academic contexts (Mauranen 2014), the negotiation of acceptability and correctness in lingua franca interaction (Hynninen 2013), and verb-syntactic features in English as a lingua franca (Ranta 2013).

Of the most relevant features in spoken ELF communication, repetition has been shown to play an important role in serving a wide range of functions, including enhancing clarity and making discourse more effective (Kaur 2009; 2012), and contributing to social cohesion (Mauranen 2010).

A still neglected field of investigation within ELF studies on repetition is medical discourse, despite the proliferation of medical research output in the English language and the growing number of EMP (English for Medical Purposes) literacy programs.

This paper explores – from both a quantitative and qualitative perspective – the use of repetition of the most frequent same-speaker content key word as found in a medical subcorpus of speech events made up of lectures and included in the medical section of the ELFA corpus. Central to the study is that previous research on repetition has highlighted that differences between NS (Native Speaker) and NNS (Non-Native Speaker) exchange do not basically seem to consist of the type of repetition identified but of the fundamental role it plays in enhancing understanding and negotiating knowledge in a lingua franca context, as well as of a higher pervasiveness in

ELF speakers' interactions compared to those in NS speech. In this respect Kaur (2009: 72) states:

> While repetition performs a range of functions in non-native speaker discourse, not unlike those in native speaker conversation, of particular interest is its role in 'facilitating and enhancing intersubjective intercultural understanding' (Neil 1996: 124). That repetition has been found 'to be most noticeable in situations in which speakers are least likely to share a linguistic variety' (Johnstone, 1987: 205), suggests that it has a crucial role to play in the negotiation of meaning and understanding in a lingua franca context.

Thus, the starting hypothesis here is that, given the pedagogical nature of the medical subcorpus investigated and its ELF encounters, not only repetition is expected to be pervasive in the data for didactic purposes, but extra repetition is likely to be located too as the NNS subcorpus is compared to a medical academic corpus of NS encounters.

The choice for ELF spoken academic medical discourse as a ground where investigating key word repetition basically stems from three main interrelated factors. First, the close relationship between the language of science and English, with medical English being a highly influential field of discourse (Gotti & Salager-Meyer 2006: 10-11); second, the deep impact of the language of academia in that «it is international, mobile and thoroughly dependent on cooperation across national borders and internationally negotiated standards, especially in science, where cutting edge research teams operate in several countries and recruit from anywhere in the world» (Mauranen 2010: 7); third, the status of English as a global lingua franca of international communication. In this regard, lingua franca English is the «English most widely used for scientific and scholarly pursuits, and as it comprises the spoken mode, it is where the language can be expected to undergo particularly fast change» (Mauranen 2010: 7).

1.1. Previous research on repetition in NS and NNS discourse

Much of the research previously carried out on repetition focused on the various functions it serves in NS everyday conversation. Johnstone (1994: 6) provides a wide range of functions served by repetition:

> Repetition functions didactically, playfully, emotionally, expressively, ritualistically: repetition can be used for emphasis or iteration, clarification, confirmation; it can incorporate foreign words into a language, in couplets, serving as a resource for enriching the language […] repetition can be bridging device in conversation, a way of dealing with an interruption, or a way of validating what another speaker has said. Repetition is a persuasive device. It is one of the primary forms of play.

Tannen (2007: 64), who states that «it would be hubris (and hopeless) to attempt to illustrate every form and function of repetition», classifies the

purposes «simultaneously» served by repetition under four main categories, namely production, comprehension, connection, and interaction (Tannen 2007: 58). As a production tool, repetition is a more efficient and energy-saving communication strategy. It allows a speaker to obtain a frame for new information so that s/he is not obliged to newly formulate it. As for comprehension, the main function of repetition is a consequence of that served for production, that is a better comprehension of the information on the recipient's part as a result of a semantically less dense discourse. As far as connection is concerned, Tannen (2007: 60) draws on Halliday and Hasan (1976) taxonomy of cohesive devices including repetition as serving a referential and tying function. Finally, on the interactional level, repetition serves several functions, including keeping the floor, stalling, persuasion, linking one speaker's ideas to another's, ratifying another's contributions, providing back-channelling, and including in an interaction a person who did not hear a previous utterance.

All the above-mentioned functions make repetition play a fundamental role in oral communication because «it not only ties parts of discourse to other parts, but it bonds participants to the discourse and to each other, linking individual speakers in a conversation and in relationships» (Tannen 2007: 61). Most importantly, Tannen investigation highlights the ultimate function of repetition as a result of the congruence of production, comprehension, connection and interaction, that is the accomplishment of interpersonal involvement. Repeating words, sentences and phrases may serve several functions, such as showing acceptance of others' utterances, giving evidence of one's own participation, showing one's response to another's utterance, etc. (Tannen 2007: 61). Norrick (1987: 72) distinguishes between same-speaker repetition and other-speaker repetition (or allo-repetition). The latter plays an equally important role as same speaker's in the negotiation of knowledge and mutual understanding, and «act as a device to signal agreement, rapport and even surprise or disbelief».

Studies have also been carried out on repetition in NS institutional discourse. Barton (1999), for example, investigates the multiple functions of the repeated use of slogans and sayings in the discourse of a support group for parents of children with disabilities. Silva & Santos (2006) examine the repetitions in the discourse of a learner of Portuguese in three different institutional settings and found out that the functions of repetition observed differed across settings both quantitatively and qualitatively.

As far as studies on ELF interactions are concerned, an extensive analysis of repetition is given by Kaur (2009), who distinguishes several functions as for both same-speaker and other-speaker repetition. Her *repertoire* includes all functions aimed at preventing misunderstandings and establishing or re-establishing shared understanding. In another work by Kaur (2012), the scholar focuses on self-repetition in ELF talk (in an academic setting) as for its function in enhancing clarity. The analysis shows that ELF speakers use

several strategies, for example parallel phrasing, combined repetition and repaired repetition, in order to increase recipient understanding. Lichtkoppler (2007) identifies three types of repetition with reference to the scale of fixity: exact repetition, repetition with variation, and paraphrasing. Cogo (2009) analyses other-repetition in ELF exchange and identifies several functions, two of which are maintaining rhythmic synchrony and showing alignment with the speaker of the original utterance. Björkman (2010) distinguishes three subcategories of repetition, namely, repetition for emphasis, repetition caused by disfluencies (which is not considered a strategy), and repetition of others' utterances.

Mauranen (2012: 220) arises the question whether repetition is a phenomenon of spoken interaction in general, or whether it is a communicative strategy used to enhance understanding between different lingua cultural speakers. She maintains that

> much self repetition and paraphrasing is occasioned by normal contingencies of spoken interaction, in which ELF is no different from any other kind of speaking […]. But in addition to making themselves clear and their points comprehensible to their interlocutors, speakers also actively engage with each other and use repetition as a resource for achieving this.

1.2. Self-repetition in ELF interaction

Repetition can be classified using different functional and formal criteria (cf. Tannen 2007). Relevant to the study of same-speaker most frequent key word repetition in ELF communication is its classification according to who performs the practice, i.e. the same speaker or the other speaker / recipient (Kaur 2009).

In an ELF setting,

> same-speaker repetition provides the recipient with another opportunity to hear and understand the prior utterance while other-speaker repetition is designed to elicit confirmation of the recipient's understanding of the prior utterance or further clarification to facilitate understanding (Kaur 2009: 74).

As Kaur (2009: 74-75) observes, in same-speaker repetition it is the current speaker who «recycles» all or part of the ongoing turn or some preceding turn. In an ELF setting, repeats by the same speaker are generally performed to ensure the effectiveness of communication. Thus the speaker repeats all or part of a turn «to both enhance and secure recipient understanding after the display of a (possible) problem of understanding on the part of the recipient».

In Kaur (2012) work on the role of repetition in enhancing clarity in English as a lingua franca talk, four types of same-speaker repetition displayed to accomplish the lingua-cultural diversity are identified in an international academic setting, namely parallel phrasing, key word(s)

repetition, combined repetition, and repaired repetition. These practices revealed to be fundamental in the negotiation of meaning and in mutual understanding in an ELF context.

Finally, in both NS and NNS previous studies, repetition has also been classified according to the dichotomy intentionality / unintentionality. Unintentional repetition, which Mauranen (2006b) refers to as «involuntary repetition», typically includes repeats of a single item (e.g. *the the the*), and self-repairs (e.g. *that occ- that occurs when*), while intentional repetition, also referred to by Biber et al. (1999) as «deliberate repetition», includes lexical repetition and rhetorical repetition. The former, in particular, is considered a very important feature in pedagogical encounters as it may influence the way students perceive lectures (Kim *et al*. 2001). Intentional repetition is used as a «cohesive device speakers use to help listeners with the clarity of their message, as well as a rhetorical device to emphasize, intensify, and stress parallelisms and correlations. Listeners use repetition as a support for memory and comprehension» (Suviniitty 2012: 155-156). Moreover, repetition can also be immediate or delayed according to the intervening material that separates the occurrences of the repeated items. In immediate repetition an item is repeated close to its occurrence, while delayed repetition is displayed when some intervening material separates the repeated items.

1.3. Same-speaker key word repetition

Kaur (2012: 602) describes same-speaker key word repetition as a common practice, in ELF talk, that «involves the recycling of a lexical item(s) oriented to by the speaker as crucial for purposes of understanding the message or idea being put across». She suggests that key word repetition allows the speaker to foreground and give relevance to those items considered central in the understanding process. In an ELF interaction context, where speakers do not share a linguistic variety, key word recycling plays an important role as «it works effectively to narrow down the range of items to those considered crucial in attaining the communicative goal» (Kaur 2012: 603).

2. Description of the corpus and methodology

The corpus used for the investigation of the most frequent same-speaker content keyword repetition in spoken academic medical discourse is represented by the 31,153-word subcorpus of academic medical lectures drawn from the 100,135-word medical section of the 1 million-word ELFA corpus. The ELFA medical section is made up of 17 speech events, both monologic and polylogic. Of the monologic events, lectures are in all five.

The corpus was searched for occurrences of the most frequent key word repetition in each lecture, and quantitative data were given, accompanied by some extracts illustrating how the repetition is used. Moreover, in order to understand if extra repetition occurred in the subcorpus as a possible result of the ELF context where the encounters took place, medical data in the ELFA corpus were compared with those included in a 44,155-word subcorpus of 5 randomly selected lectures from the NS academic medical speech from the BASE (British Academic Corpus of Spoken English) corpus. To the purpose of this study, it was considered appropriate to select the same number of speech events for the NS BASE subcorpus as those in the ELFA medical subcorpus[1]. The computation of most frequent key word repetition took into account lexical items in both their singular and plural forms. Moreover, search for key word repetition distinguished immediate repetition and delayed repetition in each lecture. Following Suviinitty (2012) model, as three to four topics were mostly discussed in the lectures, criteria for defining the frame for immediate and delayed repetition considered one to five intervening words between the repeated items for immediate repetition, and a limit of twenty intervening items for delayed repetition.

Intensive reading of the texts of both corpora was carried out, supported by a quantitative analysis performed by means of WordSmith (5.0) concordancing software.

3. Results

3.1. Quantitative analysis

The results of the search for same-speaker most frequent key word repetition in ELFA medical section corpus of lectures are illustrated in Table 1 below:

Table 1 – Occurrences of most frequent same-speaker key word repetitions in ELFA medical section 31,153-word lecture data

File	*Discipline*	*Most frequent Keyword*	*Occurrences*	*Key word repetitions*		
				Immediate (A)	*Delayed (B)*	*(A)+(B)*
ULEC23A	Cell biology	membrane	73	7	8	15
ULEC23B	Cell biology	twinfilin/s	53	10	15	25
ULEC150	Neurology	cell/s	198	18	76	94
ULEC130	Genetics	hearing	100	7	19	26
ULEC180	Neurology	oscillation/s	58	3	7	10
Total			*482*	*45 (0,1%)*	*125 (0,4%)*	*170 (0,5%)*

1. Henceforth the terms *subcorpus*/*subcorpora* will be replaced by *corpus*/corpora for convenience.

As can be seen in Table 1, repetition of most frequent key word in the five ELFA lectures occurred once every two hundred words on average in texts, and was mostly displayed in the delayed repetition type, accounting for 73,5% of total repetitions, while immediate repetition accounted for 26,5%. Moreover, the delayed repetition type occurred 2,7 times on average every immediate repetition.

In order to understand if key word repetition could be considered pervasive in the ELFA corpus, the same analysis was carried out for the BASE lecture corpus. The results are shown in Table 2 below:

Table 2 – Occurrences of most frequent same-speaker key word repetitions in BASE 44,155-word lecture data

File	*Discipline*	*Most frequent Keyword*	*Occurrences*	*Key word repetitions*		
				Immediate (A)	*Delayed (B)*	*(A)+(B)*
0018	Cell biology	endemicity	48	7	7	14
0028	Nephrology	stone/s	117	8	33	41
0037	Infectivology	virus	43	3	18	21
0032	Nephrology	diabetes	96	1	20	21
008	Infectivology	AIDS	36	2	5	7
Total			*340*	*21 (0,05%)*	*83 (0,15%)*	*104 (0,2%)*

Repetition of most frequent key word in the BASE lectures occurred once every five hundred words on average in the five texts investigated, and was mostly displayed in the delayed repetition type, accounting for 79,8% of total repetitions, while immediate repetition accounted for 20,2%. The delayed repetition type occurred 3,9 times on average every immediate repetition.

The comparison between the two corpora considering relative frequencies resulted in overall key word repetition occurring in the ELFA data twice and a half as much as in the BASE data on average (0,5% / 0,2%). As for types, immediate repetition and delayed repetition occurred in ELFA, respectively, twice as much (0,1%/0,05%), and 2,7 times (0,4%/0,15%) as much as in the BASE data on average.

Results evidenced a higher level of pervasiveness of most frequent key word repetition in the ELFA data than that in the BASE data.

3.2. Qualitative analysis

As far as qualitative analysis is concerned, there were no differences in the manner of lexical repetition use between the two corpora. Extracts below, drawn respectively from the ELFA corpus (ULEC 23B and ULEC 130) and

the BASE corpus (0018 and 0028) lectures, illustrate how lexical repetition is used in corresponding data:

(1)
1 **L**: […] the actin erm tail just grow in every direction and form these weird shapes but then when you add *twinfilin* it is
2 actually the tails start to look normal and the beads start to move again so *twinfilin* can replace the capper in this in this
3 minimum medium and here's to show that er most *twinfilin* does this but yeast and drosophila *twinfilin* don't rescue this
4 movement, so we have found the function of *twinfilin* which needs these both both of these domains […]
(ULEC 23 B) (cell biology lecture about twinfilin, a binding protein conserved from yeast to mammals)

(2)
1 **L**: […] there are also syndromic forms and many other genes are responsible for that i will not go into that er but for the
2 non-syndromic forms so the pure *hearing* impairment er we know many different genes and these er genes lead to a very
3 similar phenotype so the *hearing* impairment in in many cases is very similar or even indistinguishable the different genes
4 can er can cause it and *hearing* impairment is one of the erm, i think most extreme examples of what we call genetic
5 heterogeneity […]
(ULEC 130) (genetics lecture about hearing-related injuries)

As can be seen, the term *twinfilin* in extract 1 is used several times in the passage, precisely 4 times, and since it refers to the main topic of the speech, it is repeated as many as 53 times in the lecture (2 of which in plural form). The repetition of *twinfilin* and its explicitation over and over helps students memorize the term in question and focus attention on the crucial topic at hand.

The same can be said for extract 2, where the repetition of *hearing*, in the key word list occurring 100 times in the lecture, emphasizes the main issue of the speech. Moreover, the repetition of the term in line 4 brings back the referential precision and clarity that the use of anaphoric *it* two tokens before had temporarily obscured. Furthermore, what is of particular interest in extract 2 is the association of *hearing* with *impairment*; the latter represents the main collocate for *hearing*, occurring 45 times with it in the lecture. The occurrence of *hearing* + *impairment*, besides highlighting the key topic of the lecture, also helps acquire the exact, precise expression used in medicine when referring to «a reduction in the ability to perceive sound ranging from slight inability to complete deafness» (Farlex Medical Dictionary 2012).

The functions identified in the ELFA data can also be found in the manner of lexical repetition use in the BASE data:

(3)
1 **L**: […] you're going to potentially have different epidemiological scenarios high or low *endemicity* in the same country
2 yeah if if this is right there is no reason why we shouldn't have high *endemicity* in the U-K yeah the only reason we don't
3 have high *endemicity* is because we don't have high *endemicity* […]
(0018) (cell biology lecture about hepatitis B)

Here, too, repetition of the most frequent key word, occurring 48 times in the lecture, serves the function of orientating the recipient's attention to what is crucial in the message being put across, in the specific case the juxtapose between low *endemicity* and high *endemicity*. The second repetition of high *endemicity* in line 3, in particular, is used emphatically to intensify the concept that hepatitis B does not show high levels of endemic characteristics in the UK, and is also used to highlight one of the aspects of the disease in question from an epidemiological point of view, that is just its being or not restricted to a particular area or region.

Finally, extract 4 below illustrates how repetition helps the speaker make focus on the crucial concept to be conveyed in the speech. The lecturer (L) has just showed an x-ray and asked the students to describe what the image shows; one of them (S) has replied the image shows kidney stones:

(4)
1 **L**: […] what makes you say they're kidney *stones*
2 **S**: they're calcified
3 **L**: okay so they're calcified in fact most kidney *stones* are calcified how many kidney *stones* are calcified guess calculate a guess if you don't know […]
(0028) (nephrology lecture about kidney stones)

In extract 4, *stone* is the most crucial item of the speech, as evidenced by its many occurrences (117) in the lecture. The repetition of *stone* in association with *calcified*, which is repeated twice by the lecturer in line 3, serves the function of explicating and clarifying calcification as a characteristic of stones, thus orientating students to immediately identify stones through the association stones / calcification. Similarly, later on in the same lecture:

1 **L**: what percentage of *stones* are urate *stones*
2 **S**: two per cent
3 **L**: about seven per cent […]

The repetition of *stones* in line 1 allows the lecturer to introduce and highlight another characteristic of kidney stones, i.e. that a specific percentage of them exists being urate, thus focusing on the classification of kidney stones into different types according to their chemical composition.

As can be seen from extracts 1 to 4, the use of key word repetition basically displays explicating and emphasizing functions in both corpora, resulting in orientating the recipient's attention to what is considered crucial in the message being put across.

4. Conclusions

The investigation of key word repetition in the ELFA medical corpus of lectures confirmed the initial hypothesis according to which repetition was expected to be pervasive in a context of pedagogical encounters, and that extra repetition was likely to occur as a possible result of the ELF linguistic context. From the comparison of medical data in the ELFA corpus used as a target corpus and those in the BASE corpus used as a reference corpus, pervasiveness of most frequent key word repetition was higher in the former. However, it is quite challenging to define whether the higher level of pervasiveness of the phenomenon found in the ELFA data be due to its ELF setting. Quantitative results may suggest that occurrence of extra repetition in the ELFA data be probably motivated by the need for more clarity than that required in an NS context such as BASE. From a qualitative perspective, functions served by key word repetition use were basically identical, first and foremost that of explicating and emphasizing the specific topic at hand.

It is worth underlining that most of the repeated words included in the corpus investigated are monoreferential. Medical terms – as well as specialised terms in other discourse fields – usually have a precise unique meaning, universally accepted by the scientific community, and cannot be substituted by a synonym without causing a change in meaning too[2]. Likewise, expressions cannot be altered in their constituents. The term "impairment", for example, found in the noun phrase *hearing impairment* in the ELFA data, cannot be substituted with *damage*, *inability*, *deficiency*, or *injury* (unless these terms are used to provide a definition), as ambiguity would be generated in the immediate identification of its exact meaning when found in association with *hearing*. The same can be said for *high* and *low*, in *high endemicity* and *low endemicity* in the BASE data, where only *high* and *low* are the exact precise terms when referring to the level of diffusion of a pathological condition, as well as *endemicity* itself cannot be replaced by a synonym without necessarily generating a change in the referent too. Therefore, if on the one hand, in a pedagogical medical academic setting, word lexical repetition is a deliberate strategy to draw the recipient's attention to a specific issue, on the other hand it is also the consequence of compliance with medical discourse-related conventions adopted by specialists to avoid phenomena of referential ambiguity, which may result in lack of successful communication, whatever the linguistic context.

2. For the concept of *monoreferentiality* in specialised discourse, see Gotti 1991, p. 17. For phenomena of violation of rules in the word-formation process of specialised terminology, with particular reference to synonymy in medical language, see Gotti 1991, pp. 36-37.

References

Barton E.L. (1999) "Informational and Interactional Functions of Slogans and Sayings in the Discourse of a Support Group". *Discourse and Society* 10(4), pp. 461-486.

Biber D., Conrad S., et al. (1999) *Longman Grammar of Spoken and Written English*. London, Pearson Education Limited.

Björkman B. (2010) "So You Think You Can ELF: English as a Lingua Franca as the Medium of Instruction". *Hermes – Journal of Language and Communication Studies* 45, pp. 77-96.

Carey R. (2013) "On the Other Side: Formulaic Organizing Chunks in Spoken and Written Academic ELF". *Journal of English as a Lingua Franca* 2(2), pp. 207-228.

Cogo A. (2009) "Accomodating Difference in ELF Conversations: A Study of Pragmatic Strategies" in Mauranen A. and Ranta E. (Eds.), *English as a Lingua Franca: Studies and Findings*. Newcastle upon Tyne, Cambridge Scholars Press, pp. 254-273.

Coleman J.A. (2006) English-Medium Teaching in European Higher Education. *Language Teaching* 39(1), pp. 1-14.

Crystal D. (2003) *The Cambridge Encyclopedia of the English Language*. Cambridge, Cambridge University Press.

ELFA (2008) *The Corpus of English as a Lingua Franca in Academic Settings*. Director: Anna Mauranen. http://www.helsinki.fi/elfa/elfacorpus (last access date: 12/04/2014).

Farlex Medical Dictionary (2012), Farlex.

Gotti M. (1991) *I Linguaggi Specialistici. Caratteristiche Linguistiche e Criteri Pragmatici*. Firenze, La Nuova Italia.

Gotti M. and Salager-Meyer F. (Eds. 2006) *Advances in Medical Discourse Analysis: Oral and Written Contexts*. Bern, Peter Lang.

Graddol D. (1997) *The Future of English?* London, British Council.

Halliday M.A.K. and Hasan R. (1976) *Cohesion in English*. London, Longman.

Hynninen N. (2013) *Language Regulation in English as a Lingua Franca: Exploring Language-Regulatory Practices in Academic Spoken Discourse*, *Doctoral Dissertation (monograph).* University of Helsinki, Helsinki.

Johnstone B. (1994) "Repetition in Discourse: A Dialogue" in Johnstone B. (Eds.), *Repetition in Discourse. Interdisciplinary Perspectives* 1, 1-20, Norwood, NJ, Ablex.

Kaur J. (2009) *English as a Lingua Franca. Co-Constructing Understanding*. Saarbrücken, VDM Verlag.

Kaur J. (2012) "Saying it again. Enhancing Clarity in English as a Lingua Franca (ELF), Talk through Self-Repetition". *Text and Talk* 32(5), pp. 593-613.

Kim M.S., Kim J.J. and Kwon J.S. (2001) "The Effect of Immediate and Delayed Word Repetition on Event-Related Potential in a Continuous Recognition Task". *Cognitive Brain Research* 11, pp. 387-396.

Lichtkoppler J. (2007) "'Yah, Yah, I Know, I Know, I Know'. The Power of Repetition in ELF Conversations". *Lecture, International Research Meeting for Junior Applied Linguists*, Groningen.

Mauranen A. (2006a) "A Rich Domain of ELF – the ELFA Corpus of Academic Discourse". *Nordic Journal of English Studies* 5, pp. 145-159.

Mauranen A. (2006b) "Rhetorically Speaking: Repetition and Repair in Making a Point" in Bamford J. and Bondi M. (Eds.) *Managing Interaction in Professional Discourse: Intercultural and Interdiscoursal Perspectives*. Roma, Officina Edizioni, pp. 101-117.

Mauranen A. (2010) "Features of English as a Lingua Franca in Academia". *Helsinki English Studies* 6, pp. 6-28.

Mauranen A. (2012) *Exploring ELF: Academic English Shaped by Non-native Speakers*. Cambridge, Cambridge University Press.
Mauranen A. (2013) "'But When I Started to Think…'. Narrative Elements in Conference Presentations" in Gotti M. and Sancho Guinda C. (Eds.) *Narratives in Academic and Professional Genres*. Bern, Peter Lang, pp. 45-66.
Mauranen A. (2014) "Lingua Franca Discourse in Academic Contexts: Shaped by Complexity" in Flowerdew J. (Eds.) *Discourse in Context: Contemporary Applied Linguistics* 3. London, Bloomsbury Academic, pp. 225-245.
Norrick N.R. (1987) "Functions of Repetition in Conversation". *Text* 7, pp. 245-264.
Ranta E. (2013) *Universals in a Universal Language? – Exploring Verb-Syntactic Features in English as a Lingua Franca*, *Doctoral Dissertation (monograph)*. University of Tampere, Tampere.
Silva G. and Santos D. (2006) "Framing Participation through Repetition: the Case of a Portuguese Learner in Different Settings". *Portuguese Language Journal* 1, pp. 1-23.
Suviniitty J. (2012) *Lectures in English as a Lingua Franca: Interactional Feature.* Available at *https://helda.helsinki.fi/bitstream/handle/10138/37615/suviniitty_dissertation.pdf?sequence=1*.
Tannen D. (2007) *Talking Voices. Repetition, Dialogue and Imagery in Conversational Discourse*. Cambridge, Cambridge University Press.

SECTION 2

THE POPULARIZATION OF PSYCHIATRIC DISCOURSE IN THE MEDIA

Paola Clara Leotta
Department of Education
University of Catania

Abstract

The present paper analyses the linguistic resources used to support recommendations in psychiatric advice on panic and anxiety disorders through the analysis of an online course book that has been selected among several online sources of psychiatry and popular psychology explained to lay people in the Media.

Drawing on Gallardo's (2005) taxonomy – 'comprehension-ensuring function', 'facilitating function', 'empathy function' –, both quantitatively and qualitatively, 91 excerpts that contain recommendations, with a focus on how information is offered. It is argued that patients are more motivated to comply with advice when they receive enough information about their illness.

The findings suggest that the function of offering information has the highest frequency, followed by the function of reformulation, which may indicate that the writer, acting as a 'knowledge mediator', has built his text in such a way that the reader would clearly be informed so to accept the recommendations in order to carry out the proposed action.

Rather than 'explaining' psychiatry, this new type of discourse sets out to 'represent' psychiatry in social life, thus contributing to a better public understanding of science and going beyond the linguistic and communicative functions of this micro-language.

1. Introduction

The purpose of this research is to identify discursive and epistemic structures of popularizing discourse in psychiatry, through the analysis of an online coursebook by Barry McDonagh entitled *Panic Away. How to End Panic Attacks and General Anxiety Fast,* that has been selected among several online sources of psychiatry and popular psychology explained to lay people in the Media.

Science popularization is an area of language that has been studied over the last twenty years from different perspectives: discourse studies, text linguistics, and sociological studies, among others. According to Calsamiglia and van Dijk (2004: 371-72), it is a social process consisting of a large class

of discursive-semiotic practices, involving many types of mass media, books, the Internet, exhibitions and other genres of communicative events, aiming to communicate lay versions of scientific knowledge, as well as opinions and ideologies of scholars, among the public at large. It involves not only a reformulation, but also a recontextualization of scientific knowledge and discourse that is originally produced in specialized contexts to which the lay public has limited access. Moreover, the mass media are not passive mediators of scientific knowledge, but actively contribute in the production of new, common knowledge and opinions about science and scientists- including information and views that do not derive from scientific sources. That is, media journalists decide what to publish and how to publish about science.

Linguists have analyzed different aspects of popularized texts (which can be scientific, legal, technical) and, in particular, lexico-grammatical procedures, structure and functions. Most studies of linguistic features consist of contrastive analyses in which popularized texts are compared with the source texts, the research articles published in specialized journals (Ciapuscio 1993a, 1993b, 2000; Loffler-Laurian, 1983, 1984; Mortureux, 1982, 1985; Harvey, 1995; Myers, 1991, 1994).

More recently, textual studies have questioned some of the traditional assumptions on science communication, such as that knowledge travels only one way, from science to society (Calsamiglia and Lopez Ferrero, 2003; Ciapuscio, 2003; Moirand, 2003; Myers, 2003). This is due to the fact that there is always an interaction between scientists and intermediaries such as science journalists. In addition, Moirand (2003) points out that popularization is cyclical, because it involves communicative as well as cognitive dimensions, and it is not written on a blank slate of public ignorance, but enters into an «interdiscursive memory bank». If claims to expertise are not to be found only in scientific journals and scientific institutions, then researchers who want to investigate public understanding of science have to look beyond collections of research articles, and consider all the ways people attribute or claim expertise in discourse. This may involve studying popular science as part of scientific discourse in their own right. Thus, being a successful scientist requires involvement in a range of genres, such as talking informally with colleagues, writing proposals that must be readable and persuasive outside the specialist field, delivering papers and responding to questions. In addition, the success of a claim involves its being cited, included in textbooks and even reported in the media.

As a consequence, the emergence of a 'new' discourse on science and on psychiatry, in particular, has caused questions concerning the suitability of the triangular communication model generally applied to scientific popularization, i.e. in which there is an intermediary discourse playing between the psychiatric science discourse and the general public (Leotta, 2015).

A great number of studies have been conducted from the standpoint of conversational analysis in an attempt to analyse doctor-patient relationship

(Cicourel, 1985; Diaz Martinez, 1999; Gulich, 2003; Heritage and Sefi, 1992). In particular, online encounters on health sites and forums (especially on psychiatry and psychology) are considered to have the potential of offering a new source of data in popularization discourse, because they combine elements of modern written genres (e-mails, online messages) with oral interaction between patient-doctor. Consequently, they are something in between consultation letters and case reports (Zummo M., Leotta P., Canziani T., 2011).

What deserves our attention, here, is precisely the way in which progress in psychiatric knowledge reaches the lay people in the age of Web 2.0. Psychiatric use of language has been recognized as a specific register with its own norms, patterns and style, affecting not only terminology but ways of presentation and reasoning through particular discourse genres and procedures. No wonder, then, that the way a unit or a piece of knowledge is selected and transformed to be presented and explained to non-experts can be a very rich topic of research, since it demands rigorous re-contextualization conveyed through discourse procedures affecting both global and local levels of texts. In the case of psychiatric advice, despite the fact that some authors have dealt with scientific and medical issues as they are treated in newspapers (Ciapuscio, 1993; Moirand, 2003), not enough studies have been performed on the explicit directive purpose of those texts, i.e. in the offering of advice, which is central in psychiatrist-patient interaction. In fact, it is shown that patients are more motivated to comply with advice when they receive enough information about their illness from the doctors.

The object of this paper is the analysis of the linguistic resources used to achieve communicative purposes in psychiatric discourse through the analysis of a "how to" book published online. In particular, and in the limits of this paper, I want to research on the type of utterances that support recommendations in psychiatric advice. This topic is worth addressing because recommendations constitute a prototypical component of science popularization texts, which, besides their informative purpose (the sharing of information being at the basis of people's survival itself), have an instructive-pedagogical intention.

2. Material

This paper has a descriptive design because it describes a case study. The first five chapters of an online coursebook (actually, a multi-item set, print + CD) by Barry McDonagh entitled *Panic Away. How to End Panic Attacks and General Anxiety Fast*[1] were selected among several online sources of

1. Copyright 2012 BMD Publishing LTD (Reg. No 451616). Barry McDonagh is the creator of the *Panic Away Program*. A native of Ireland, he first published the program back in 2001 after completing his undergraduate at UCD. The program was originally created during

psychiatry and popular psychology explained to lay people in the Media (for instance, documentaries on topdocumentaryfilms.com, videos on youtube on panic and anxiety disorders or on mental health, popular online journals on medicine, such as MedicineNet.com, facebook pages, such as The London Psychiatry Centre page)[2]. The *Panic Away Program* was chosen for analysis because of its consistency and size. It is used in over 32 countries worldwide and has proved to be one of the most successful non-pharmaceutical approaches to ending an anxiety disorder. The program is representative of self help programs for anxiety and panic disorders that overcrowd the Net more and more. The program has been updated several times since its first publication to incorporate new understanding from the field of psychiatry and psychology, but it is the continued emphasis on clarity and simplicity that makes the program so appealing and effective for such a wide audience.

It represents a good example of popularization because it is an online text which is read by lay readers more than scientific ones. It is important to take into consideration the fact that in the age of Web 2.0, lay people often learn about science through unacknowledged, non-official texts which are interesting because of their peculiar way of presenting science, as well as because the version of science they present is the one that will probably prevail in society.

The search query was limited to the first five chapters (Preface, Introduction, What Causes an Anxiety Disorder?, 21-7 Technique, The 21 Second Countdown) which have a free circulation worldwide. They have been analyzed both qualitatively and quantitatively, with a focus on the excerpts of the texts that contain recommendations (91examples). It is assumed here that everyone of the excerpts selected is composed of a main speech act and secondary speech acts that support the former. The analysis of the hierarchical and sequential illocutionary structure of these speech acts may contribute to the understanding of this particular genre.

3. Methodology

Following Gallardo's (2005) taxonomy, which best explains the rationale and empirical value of my research, I will call these instructive parts "Recommending"; the other parts are informative and do not include directive speech acts. Some of these speech acts will be taken as unit of analysis, in order to determine the respective frequencies.

A sentence may include more than one unit. Several functions of recommending can be identified, according to their contribution to each of the

his college years when Barry discovered that the key to ending a panic disorder was to re-evaluate the way anxiety is treated.

2. If people are uncertain which program might help them, they can even be guided by a self-assessment questionnaire, such as the one in *www.anxieties.com.*

subordinate purposes. Gallardo refers to the function contributing to the reader's understanding of the writer's purpose as the 'comprehension-ensuring function' (comprehension-ensuring functions reformulate and expand the content of the dominant illocution); to that contributing to the reader's performing of the proposed action as the 'facilitating function' (facilitating functions provide additional information) and to that serving to establish a friendly relationship with the reader as the 'empathy function'. (Empathy can also be expressed in relation to the problem that motivates the recommendation).

3.1. Comprehension-ensuring function

In the five chapters of our online coursebook analyzed, the comprehension-ensuring function is intended to help the reader understand what actions must be carried out in order to take care of his/her health. It is performed by means of reformulating or paraphrasing procedures. Also included in this category are fictitious questions, or questions raised and answered by the writer. It is made up of:

- Paraphrasing, or Reformulation. It can expand the content of an illocution, as in explanation and specification, or reduce it, such as in summary and denomination. Paraphrases can also serve as confirmation or reinforcement.
- Exemplification. According to Gulich and Kotschi (1995), exemplification is a non-reformulating procedure, because it is not motivated by the recognition of a communication trouble source. However, in some cases, exemplification can solve a communicative problem. Exemplification contributes to a double purpose: facilitating understanding and obtaining acceptance.
- Fictitious questions. They help to interpret the dominant illocution as a recommendation.
  Ciapuscio (1991: 339) states that the use of fictitious questions has several purposes: "[…] on the one hand, they highlight the topics; on the other, they serve to achieve greater participation in the text and thus make the text, though to a limited extent, more interactive" (my translation).
- Metapragmatic evaluations. They characterize a speech act which is introduced as quoted speech. The reporting verb gives an instruction as to how it should be interpreted.

Within the category of Comprehension-ensuring function, the function aimed at making the reader accept the communicative purpose as appropriate, thereby motivating him/her to perform the requested action, will be termed here the *Acceptance function*.

Depending on the way in which the acceptance function is realized (with

regard to semantic content, position with respect to the dominant illocution, or type of connection), Gallardo distinguishes four main subtypes:

- *Justification function*. This function gives the reasons that validate the content of the dominant illocution, and, specifically, the recommended action. That is to say, it explains why an action is suggested. It can also precede the dominant illocution
- *Enablement function.* The propositional content enables or authorizes the speaker to make a recommendation. This function favors the acceptance of the speaker's purpose, by offering information about a problem that can be solved or prevented by the action suggested in the dominant illocution. The effect link can be made explicit by connectives such as "that's why, therefore", which present the advice as a conclusion, thus increasing itspersuasive force.
- *Concessive function.* It is an assertion preceding the dominant illocution, the propositional content of which denotes a fact or a state of affairs that is rejected or questioned by the dominant illocution. The contrast relationship between the dominant illocution and the supporting function can be expressed by "although, but". The concessive function contributes to the acceptance of the dominant illocution by highlighting its content as new and contrary to what is known.
- *Purpose-indicating function.* The facts expressed in the purpose clause are often of a prospective nature. The initial purpose clause "functions to state a problem within the context of expectations raised by the preceding discourse, to which the following material (often many clauses) provides a solution (Thompson, 1985: 55). Initial position of these clauses indicates a thematizing intention (Galan Rodriguez, 1999).

The names of functions reflect the writer's communicative intention, namely to get the reader to comprehend and accept the writer's purpose, and to enable him/her to carry out the recommended action.

3.2. Facilitating function

It contributes to make the performance of the proposed action possible by offering information, thus making it easy for the reader to carry out the recommended action. For ex., "this treatment is free", "it costs between …"

It must be noted that the information offered by this function is strongly linked to context; that is to say, it applies only to a particular audience at a particular time and place.

3.3. Empathy function

By empathy, I mean the capacity to participate affectively in another person's reality. This function is context-oriented. The writer intends to

shorten the distance to the reader, create a feeling of sympathy and, at the same time, persuade him/her to perform the recommended action. ("Although it is not always easy…., it is almost a 'mission impossible'").

The empathy function can only be performed by a speaker different from the one making the recommendation, otherwise there would be a contradiction. By means of the empathy function, the writer not only sympathizes with the hardships the reader may encounter, but can also share with him/her a favourable situation ("to the joy of many…").

4. Results

Table 1 presents a list of the many portions of the five chapters of *Panic Away* investigated (following a chronological order, containing the functions of recommendations explained above). To report on their frequency, thus allowing a more focused and objective analysis, it was necessary to list them all, even if they often show the same functions.

Table 1

No.	*Material*	*Functions of Recommending*
1	No exceptions! I can speak with authority on this because I've seen it eliminate anxiety […]. My conviction is strengthened by the fact that […]	EMPATHY, JUSTIFICATION, REFORMULATION
2	You probably feel like the ground has been pulled from beneath your feet. Your sense of security is shaken and day-to-day reality can feel a little strange.	EMPATHY, EXEMPLIFICATION
3	The content […] is very unique. You won't find any of the repetitive "anxiety speak" […]	REFORMULATION
4	Many excellent doctors such as Dr. Claire Weekes and Dr. Viktor Frankl, have also put forward the same basic principles as the only truly effective approach to eliminating anxiety.	QUOTED SPEECH
5	I put this course together several years ago, based on what worked for me […]working through my own anxiety.	EMPATHY
6	She can feel her heart beginning to beat hard-so hard, in fact, that her throat is pulsating. […] She notices how her left arm starts to tingle with a pins-and-needles sensation.	REFORMULATION

Table 1 – Continued

No.	*Material*	*Functions of Recommending*
7	The doctor arrives and tells her that they cannot find anything physically wrong with her.	QUOTED SPEECH
8	This is relieving and yet confusing at the same time.	EMPATHY
9	The new doctor prescribed some anti-anxiety medication.	REFORMULATION
10	Jane has now entered a phase called general anxiety or generalized anxiety disorder (GAD). This is a feeling of lingering anxiety accompanied by anxious thoughts. It's the type of anxiety that's there in the morning on waking, and it often lasts throughout the day.	REFORMULATION
11	These are known as *situational panic attacks* […] For example, someone might have had a spontaneous panic attack while at a concert with friends[…]	EXEMPLIFICATION
12	That's a really important point.	ENABLEMENT
13	Anxiety disorder has nothing to do with a lack of courage, in fact it is quite the opposite.	JUSTIFICATION
14	That is what you will learn with this program.	ENABLEMENT
15	Think of all the panic attacks you've experienced and how you've always come out on the other side- possibly petrified, but nevertheless alive and undamaged.	CONCESSIVE FUNCTION
16	Aren't you still here, after all those attacks that convinced you that you were going to die?	FICTITIOUS QUESTION
17	The Panic Away Program is responsible for helping many thousands of people worldwide end their anxiety disorders. At the core of the Panic Away Program is the 21-7 Technique. […] This technique is made up of two separate components. You have the 21 Second Countdown, which stops panick attacks, and then the 7 Minute Exercise, which reduces feelings of general anxiety.	OFFERING INFORMATION

Table 1 – Continued

No.	*Material*	*Functions of Recommending*
18	Some argue that it's a chemical imbalance to be treated with medication, while others suggest it's the result of internal conflicts.	QUOTED SPEECH
19	Two types of medications commonly recommended for anxiety are minor tranquilizers (e.g. Xanax, Ativan, Valium) and anti-depressants (e.g. Prozac, Paxil, Zoloft).	OFFERING INFORMATION
20	It's important to point out that the chemical imbalance approach is a theory and not a fact. There's no test for chemical imbalance in the human brain.	REFORMULATION
21	Regardless of the lack of evidence, many in the West are absolutely convinced[…]	CONCESSIVE FUNCTION
22	Are the chemicals in his brain causing him to panic?	FICTITIOUS QUESTION
23	For example, if a train suddenly stops[…]	EXEMPLIFICATION
24	It may be the case that other, more serious mental health issues such as manic depression or schizophrenia really are the result of a chemical imbalance.	EXEMPLIFICATION
25	There is a real link between anxiety and hormonal fluctuations experienced by women […]	OFFERING INFORMATION
26	Perimenopause (the period of time before the onset of menopause)	REFORMULATION
27	One of the world's foremost anxiety experts, the late Dr. Claire Weekes, described how many anxiety disorders start from a type of exhaustion.	QUOTED SPEECH
28	The body and mind become very sensitized and susceptible to "nervous illness" (an old term she used for what's known today as an anxiety disorder).	REFORMULATION
29	Mental exhaustion is often brought about by excessive worry or stress, and emotional exhaustion can be connected to issues like bereavement or divorce.	OFFERING INFORMATION

Table 1 – Continued

No.	*Material*	*Functions of Recommending*
30	An anxious thought about a change in the rhythm of the body can send the body into a tailspin of anxiety, as is the case with panic attacks.	EXEMPLIFICATION
31	The disorder can last for weeks to years.	OFFERING INFORMATION
32	Dr. Weekes pointed out how easy it is […]	QUOTED SPEECH
33	For example, people may feel a bit uneasy while sitting in traffic because a thought has scared them into thinking that they're trapped in their car.	EXEMPLIFICATION, JUSTIFICATION
34	In more extreme cases, it gets to the point where people only feel safe in their own homes (agoraphobia).	REFORMULATION
35	The connection between anxiety disorders and a sensitized state is a theory further developed in the 1980's by Steven Reiss and Richard J. McNally.	OFFERING INFORMATION
36	They called this sensitized state "anxiety sensitivity". […] An anxiety sensitivity index (ASI) was created – a tool with which people can measure their stress sensitivity via self-scoring.	REFORMULATION
37	It is used to assess anxiety disorders in many thousands of patients every year.	OFFERING INFORMATION
38	Another trigger of panic attacks and general anxiety can be inner conflict issues. An inner conflict may be the result of unresolved issues […]	REFORMULATION
39	The person is usually aware of what the issue is, as they frequently wrestle with it on a mental and emotional level.	JUSTIFICATION
40	Therapy in such cases helps to directly address the issue and ensure a lasting recovery from anxiety.	PURPOSE-INDICATING CLAUSE
41	Recovery happens by teaching the person a new and empowered response to the sensations associated with anxiety.	OFFERING INFORMATION

Table 1 – Continued

No.	*Material*	*Functions of Recommending*
42	The cycle of panic and anxiety (fear feeding off fear) […]	REFORMULATION
43	The Panic Away program teaches a person how to achieve this in a very simple, yet powerful way through the 21-7 Technique.	PURPOSE-INDICATING CLAUSE
44	The 21-7 Technique removes the fear and creates an opportunity for healing to occur.	OFFERING INFORMATION
45	Anxiety disorders are not permanent; don't let anyone convince you differently.	EMPATHY
46	Up until now you may have felt very misunderstood and isolated, as those around you fail to fully understand what you are going through.	EMPATHY, JUSTIFICATION
47	People […] make unhelpful remarks like "you have to just learn to relax", "it's all in your mind", and "come on, pull yourself together".	EXEMPLIFICATION
48	Such remarks are generally made with good intentions but prove of little value […]	CONCESSIVE FUNCTION
49	For example, it has been found that some people diagnosed with an anxiety disorder can have underlying medical conditions such as hypoglycemia (low blood-glucose levels), hyperthyroidism (excessive hormones released by the thyroid gland), inner ear infections, and certain types of heart conditions such as mitral valve prolapse.	EXEMPLIFICATION, REFORMULATION
50	Having a full check up is vital as it will enable your doctor to identify if any of the above conditions are present.	OFFERING INFORMATION, JUSTIFICATION
51	That way, you'll be better able to implement the technique.	PURPOSE-INDICATING CLAUSE
52	While it is, by nature, an unpleasant sensation, it's not by any means dangerous.	EMPATHY
53	One of the biggest myths surrounding anxiety is that it's harmful and can lead to a number of various life-threatening conditions.	OFFERING INFORMATION

Table 1 – Continued

No.	*Material*	*Functions of Recommending*
54	Anxiety is defined as a state of apprehension or fear resulting from the anticipation of a real or imagined threat, event, or situation.	REFORMULATION
55	However, most people who have never experienced panic attacks or extreme anxiety fail to realize the terrifying nature of the experience. […] The threat of losing complete control seems very real and, naturally, very terrifying.	EMPATHY
56	I'm sure most of you have heard of the fight/flight response, coined by Walter Cannon.	QUOTED SPEECH
57	Have you made the connection between this response and the unusual sensations you experience during and after a panic attack?	FICTITIOUS QUESTION
58	Anxiety […] is so named <u>because</u> all of its effects are aimed toward either fighting or fleeing from the danger.	JUSTIFICATION
59	<u>Thus</u>, the sole purpose of anxiety is to protect the individual from harm.	ENABLEMENT
60	The automatic nervous system […] is responsible for gearing the body up for action, as well as calming the body down and restoring equilibrium.	OFFERING INFORMATION
61	Robert Sapolsky of Stanford University describes this dual role of the nervous system <u>like</u> the brake and accelerate pedals of a car.	QUOTED SPEECH, EXEMPLIFICATION
62	It serves <u>as</u> our restoration system.	PURPOSE-INDICATING CLAUSE
63	<u>This explains why</u>, when a panic attack occurs, the individual often feels a number of different sensations throughout the body.	ENABLEMENT
64	The sympathetic system (accelerate pedal) is responsible for releasing the adrenaline from the adrenal glands, small glands located just above the kidneys.	REFORMULATION
65	The parasympathetic nervous system (brake pedal) gets called into action […]	REFORMULATION

Table 1 – Continued

No.	*Material*	*Functions of Recommending*
66	The parasympathetic system is what we all know and love, because it returns us to a calm, relaxed state.	EMPATHY
67	Don't fear that a panic attack will never end-it will.	EMPATHY
68	This is one of the many built-in protection systems the body has for survival.	OFFERING INFORMATION
69	Rest assured that your body's primary goal is to keep you alive and well.	EMPATHY
70	Not so convinced?	FICTITIOUS QUESTION
71	There has never been a reported incident of someone dying from a panic attack.	OFFERING INFORMATION
72	Activity in the sympathetic nervous system increases our heartbeat, speeds up the blood flow throughout the body, and ensures that all areas are well-supplied with oxygen and that waste products are removed.	OFFERING INFORMATION
73	This happens in order to prime the body for action.	PURPOSE-INDICATING CLAUSE
74	A fascinating feature of the fight/flight mechanism is that tightened blood vessels channel blood away from areas where it's immediately not needed to areas where it's urgently needed.	EMPATHY
75	For example, should there be a physical attack, blood drains from the skin, fingers, stomach, and toes so that less blood is lost, and it's moved to "active areas", such as the thighs and biceps, to help the body prepare for action.	EXEMPLIFICATION, PURPOSE-INDICATING CLAUSE
76	This is why many feel numbness and tingling in their arms and stomach during a panic attack.	ENABLEMENT
77	If you're really worried that such is the case, visit your doctor and have your heart checked.	OFFERING INFORMATION
78	It's very common during a panic attack to feel tightness in the chest and throat.	OFFERING INFORMATION

Table 1 – Continued

No.	*Material*	*Functions of Recommending*
79	Can a panic attack stop your breathing?	FICTITIOUS QUESTION
80	This has obvious importance for the body's defense, since the tissues need to get more oxygen to prepare for action.	JUSTIFICATION
81	Having experienced panic attacks myself, […]	EMPATHY
82	As a result, I would have to manually take over and tell myself when to breathe in and when to breathe out.	ENABLEMENT
83	A side effect of increased breathing is actually a decrease in the blood supply to the head.	OFFERING INFORMATION
84	This results in feelings of tension […]	ENABLEMENT
85	Thus, one often feels hot and flushed and, because this process takes a lot of energy, the person can feel tired and drained.	ENABLEMENT, JUSTIFICATION
86	Therefore, when activated, the mind's priority is placed upon searching the surroundings for potential threats […] because the mind has been trained to seek all potential threats[…]	ENABLEMENT, JUSTIFICATION
87	Why is the fight/flight response activated when there's apparently nothing to be frightened of?	FICTITIOUS QUESTION
88	It may be relationship problems, bereavement, or conflict with loved ones.	EXEMPLIFICATION
89	Experiencing any of the above sensations can be very unsettling […]	EMPATHY
90	The 21 Second Countdown is a technique that can be applied to stop a panic attack in 21 seconds flat.	OFFERING INFORMATION
91	When will this strike again? When will I have to do battle with this terror again?	FICTITIOUS QUESTIONS

4.1. Frequencyofrecommendations

From a quantitative point of view, in order to assess what objectives are the most relevant for Barry McDonagh to reach his communicative purpose, I have deemed it necessary to calculate the frequency of occurrence of the different supporting function types in the five chapters studied. The results

Table 2

Functions	*Frequency*	*%*
EMPATHY	14/91	15.3%
JUSTIFICATION	10/91	10.9%
REFORMULATION	16/91	17.5%
EXEMPLIFICATION	11/91	12.0%
QUOTED SPEECH	7/91	7.6%
ENABLEMENT	9/91	9.80%
CONCESSIVE FUNCTION	3/91	3.2%
FICTITIOUS QUESTIONS	7/91	7.6%
OFFERING INFORMATION	19/91	20.8%
PURPOSE-INDICATING CLAUSE	6/91	6.5%

are summarized in Table 2, showing the number of examples referring to the different functions and their frequency.

In the material analysed, I have explored the interface between psychiatric discourse on panic and anxiety disorders and Barry McDonagh's management of knowledge: how people on the Net learn about new things, and how popularizing discourse manages its resources so as to enable or improve such understanding and learning.

My main findings pertain to the interesting functions aimed at offering information, as in ex.19

Two types of medications commonly recommended for anxiety are minor tranquilizers (e.g. Xanax, Ativan, Valium) and anti-depressants (e.g. Prozac, Paxil, Zoloft)

or in ex. 31

The disorder can last for weeks to years.

Without any doubt, the main function of the media is to inform. In fact, as shown in table 2, the functions of offering information have shown the highest frequency, followed by the function of reformulation, which may indicate that the writer has built his text in such a way that the reader would *clearly* be *informed* so to accept the recommendations in order to carry out the proposed action.

As we read in ex. 38:

Another trigger of panic attacks and general anxiety can be inner conflict issues. An inner conflict may be the result of unresolved issues

Or, in ex. 64:

The sympathetic system (accelerate pedal) is responsible for releasing the adrenaline from the adrenal glands, small glands located just above the kidneys.

These examples of reformulating procedures are probably given with the aim of favouring the understanding of the dominant illocution content.

In general, 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 expert discourse so as to make it accessible.

Only later, does the writer offer *reasons* and *examples* to justify this acceptance.

In addition, when the performance of recommended actions has involved some degree of difficulty, the writer has expressed sympathy with the reader by using the supporting function of *empathy* (15.5%), as we can read in ex. 45:

Anxiety disorders are not permanent; don't let anyone convince you differently

Or, as in ex. 69:

Rest assured that your body's primary goal is to keep you alive and well.

By means of the empathy function, the writer not only sympathises with the hardships the reader may encounter, but can also share with him/her a favourable situation, as in the examples above.

The empathy function may be considered a characteristic feature of popularizing psychiatric texts, as it does not appear, for example, in medical leaflets accompanying prescription drugs (See Gallardo, 2005).

It can be assumed that a cooking recipe or an instruction book do not require justification for every instruction. However, in psychiatric texts, justification seems to be quite important, so that an advice is easier to accept, instead of being interpreted as an intrusion into private life.

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.

As far as Exemplification (12.2%) is concerned, this function contributes to a double purpose: facilitating understanding, as we can read in ex. 11:

These are known as *situational panic attacks* […] **For example**, someone might have had a spontaneous panic attack while at a concert with friends[…]

and obtaining acceptance as in ex. 47:

People […] make unhelpful remarks **like** "you have to just learn to relax", "it's all in your mind", and "come on, pull yourself together".

The justification function (11.1%) explains why an action is suggested, such as in ex. 33:

For example, people may feel a bit uneasy while sitting in traffic **because** a thought has scared them into thinking that they're trapped in their car.

Or offers reasons for following a piece of advice, thus enhancing the communicative force, These reasons are based on knowledge, experience, or clinical investigations showing the risks and benefits of certain treatments and prevention methods,as we read in ex. 80:

This has obvious importance for the body's defense, **since** the tissues need to get more oxygen to prepare for action.

The enablement function, as shown in examples 14 or 63, favours the acceptance of the writer's purpose by offering information about a problem that can be solved or prevented by the action suggested in the dominant illocution:

Thatis what you will learn with this program

or,

This explains why, when a panicattack occurs, the individual often feels a number of different sensations throughout the body.

The use of quoted speech is quite low (only 7.7%), which means that Barry McDonagh wants to commit himself, instead of marking distance from what is being said, as we can often see in his use of the first person (I believe, I think, My conviction is, My feeling is, In my experience, I'm sure, etc.). This also explains his use of the enablement function (10%).

In the examples below, the fictitious questions (7.7%) offer prominent information and give instructions as to how the dominant illocution should be interpreted.

Ex. 16: Aren't you still here, after all those attacks that convinced you that you were going to die?

or

Ex 79: Can a panic attack stop your breathing?

The less frequent functions in our corpus are purpose-indicating clauses and concessive functions.

In example 51,

That way, you'll be better able to implement the technique

the purpose clause is in the initial position, thus marking the beginning of a new illocutionary hierarchy. When the purpose-indicating function is in post-verbal position, its content is more specific, as we can read in the following example:

Ex. 75: **For example**, should there be a physical attack, blood drains from the skin, fingers, stomach, and toes **so that** less blood is lost, and it's moved to "active areas", such as the thighs and biceps, to help the body prepare for action.

A clear example of a concessive function being present in our corpus is ex. 15:

Think of all the panic attacks you've experienced and how you've always come out on the other side- possibly petrified, **but** nevertheless alive and undamaged.

The use of *but* contributes to the acceptance of the dominant illocution by highlighting its content as new and contrary to what is known.

5. Conclusions

The demands of the information on the Net and the nature of psychiatric information are very different because they reflect two ways of representing knowledge: science based on ongoing search, on the discussion of hypotheses, with no conclusive evidence vs. the media representation based on the idea that scientists and journalists are able to provide an account that will bring a quick solution to the problem.

The existence ofan online book such as the one analysed here shows that popular science is produced for audiences without a professional need for information about science, but who want to keep abreast of developments. In fact, popular science discourses play an enormous role in shaping most people's views of academic research: informing lay understandings of the interests, methods and knowledge that it produces. Their existence underlines that 'science' is not a monolithic entity always understood in the same way, but a social construct created by different groups with different interests for different audiences. While many popular science books are written by scientists for an elite educated audience, the public gets most of its information about science from specialized magazines. Most daily newspapers now have specialized science sections and the number of science articles in the press has been increasing. These offer interpretations of academic activity recast with an eye for the interests, beliefs and preoccupations of a new readership. But, it would be a great oversimplification to dismiss popular science as merely 'infotainment' (Hyland, 2009). The different purposes and audiences of the two genres mean that writers negotiate proximity and represent science in very different ways to those employed by professional scientists in research journals. This can easily be seen by analyzing the language choices made by Barry McDonagh who asks readers both to recognize something as familiar and to give priority to the potential payoffs and results of the method, rather than the means of obtaining them. This is the main reason why we have analyzed supporting functions in the excerpts taken into analysis, and

looked at how these functions were grouped in accordance with the writer's goals, but these supporting functions are always subordinated to the main communicative purpose: that the reader carry out some recommendations. And supporting the main illocutions is the best way to achieve acceptance of recommendations by any lay reader.

As our analysis has shown, the functions of offering information have the highest frequency, followed by the function of reformulation, which may indicate that the writer has built his text in such a way that the reader would *clearly* be *informed* so to accept the recommendations in order to carry out the proposed action.

Finally, it is interesting to observe that the strategies analyzed so far have shown that Barry McDonagh has acted as a *knowledge mediator*[3] for the management of knowledge on panic attacks and general anxiety, to emphasize what was presupposed, what was reminded and what was newly constructed, according to the categories of *scientific instruction* and *scientific journalism* (Widdowson, 1979). The final outcome is that kind of «intermediary discourse» (Moirand, 2003), viewed by some as a form of translation, and by others as a means of distortion, which is usually represented by means of a specific triangular communication model (science-mediator-public). The distance is shortened between writer and reader, a feeling of sympathy is created and, at the same time, the persuasion to perform the recommended action is put into practice.

Rather than explaining psychiatry, this new type of discourse sets out to represent psychiatry in social life, thus contributing to a better public understanding of science and going beyond the linguistic and communicative functions of this micro-language.

References

Calsamiglia H. and Lopez Ferrero C. (2003) "Role and Position of Scientific Voices: Reported Speech in the Media". *Discourse Studies* 5(2), pp. 147-173.

Calsamiglia H. and van DijkTeun A. (2004) "Popularization Discourse and Knowledge About the Genome". *Discourse and Society* 15(4), pp. 369-389.

CiapuscioGuiomar (1991) "La Expresion del Tema en Textos de Divulgacion Scientifica". *Analecta Malacitana* 14(2), pp. 335-346.

CiapuscioGuiomar (1993) "Reformulaciontextual: El Caso de Lasnoticias De Divulgacion Scientifica". *Revista Argentina de Linguistica* 9(1/2), pp. 69-116.

CiapuscioGuiomar (1993) *Wissenschaft furden Laien: Untersuchungenzu popular wissenschaftlichen Nachrichtenaus Argentinien*. RomanistischerVerlag, Bonn.

CiapuscioGuiomar (2000) "Hacia una Tipologia del Discurso Especializado". *Discurso y Sociedad* 2(2), pp. 39-70.

3. My italics.

CiapuscioGuiomar (2003) "Formulation and Reformulation Procedures in Verbal Interactions Between Experts and (Semi-) Laypersons". *Discourse Studies* 5(2), pp. 207-233.
Cicourel A. (1985) "Doctor-Patient Discourse". *Discourse Analysis in Society* 4, London, Academic Press, pp. 193-202.
Diaz Martinez F. (1999) "Asimetria Professional en la Consulta De Oncologia: Algunas Constricciones Conversacionales de la Clinica". *Discurso y Sociedad* 1 (4), pp. 35-68.
Galan Rodriguez C. (ANNO) "La Subordinacion Causal y Final" in Bosque I. and Demonte V. (Eds), *Gramatica Descriptiva de la Lengua Espanola 3*. Espasa-Calpe, Madrid, pp. 3597-3642.
Gallardo S. (2005) "Pragmatic Support of Medical Recommendations in Popularized Texts". *Journal of Pragmatics* 37, pp. 813-835.
Gulich E. and Kotschi T. (1995) "Discourse Production in Oral Communication" in Quasthoff U.M. (Eds.), *Aspects of oral communication*. Berlin/New York, Walter de Gruyter, pp. 30-66.
Gulich E. (2003) "Conversational Techniques Used in Transferring Knowledge Between Medical Experts and Non-Experts". *Discourse Studies* 5(2), pp. 235-263.
Harvey A.M. (1995) "El Fenomeno de la Reformulacion del Discurso Scientifico". *Lenguas Modernas* 22, pp. 105-112.
Heritage J. and Sefi S. (1992) "Dilemmas of Advice: Aspects of the Delivery and Reception of Advice in Interactions Between Health Visitors and First-Time Mothers" in Drew P.S. and Heritage J. (Eds.), *Talk at Work: Interaction in Institutional Settings*. Cambridge, Cambridge University Press, pp. 359-417.
Hyland K. (2009) *Academic Discourse*. London, Continuum.
Leotta P.C. (2015) "The Popularization of Psychological Discourse in the Media: Questioning the Boundaries of Genre" in Bhatia V.K., et al. (Eds.), *Variations in Specialized Genres. Standardization and Popularization*. Tubingen, NarrFranckeAttemptoVerlag, pp. 197-211.
Loffler-Laurian A.M. (1983) "Typologie Des Discours Scientifiques: Deux Approaches". *Etudes de Linguistique Appliquee* 51, pp. 8-20.
Loffler-Laurian A.M. (1984) "Vulgarisation Scientifique: Formulation, Reformulation, Traduction". *Langue Francaise* 64, pp. 109-125.
McDonagh B. (2012) *Panic Away. How to End Panic Attacks and General Anxiety Fast*. BMD Publishing, LTD.
Moirand S. (2003) "Communicative and Cognitive Dimensions of Discourse on Science in the French Mass Media". *Discourse Studies* 5(2), pp. 175-206.
Mortureux M.F. (1982) "Paraphrase et Metalangage Dans le Dialogue de Vulgarisation". *Langue Francaise* 52, pp. 48-61.
Mortureux M.F. (1985) "Linguistique et Vulgarization Scientifique". *Information sur les Sciences Sociales* 24(4), pp. 825-845.
Myers G. (1991) "Lexical Cohesion and Specialized Knowledge in Science and Popular Science Texts". *Discourse Processes* 14(1), pp. 1-26.
Myers G. (1994) "Narratives of Science and Nature in Popularizing Molecular Genetics" in Coulthard M. (Eds.), *Advances in Written Text and Analysis*. London, Routledge.
Myers G. (2003) "Discourse Studies of Scientific Popularization: Questioning the Boundaries". *Discourse Studies* 5(2), pp. 265-279.
Nwogu K.N. (1991) "Structure of Science Popularizations: A Genre-Analysis Approach to the Schema of Popularized Medical Texts". *English for Specific Purposes* 10(2), pp. 111-123.

Thompson S. (1985) “Grammar and Written Discourse: Initial vs. Final Purpose Clauses in English”. *Text* 5(1/2), pp. 55-84.
Widdowson H.G., (197?), *Explorations in Applied Linguistics*. Oxford, O.U.P.
Zummo M., Leotta P. and Canziani T. (2011) “Web Counseling: A New Health Discourse?” in Papanikos G.T. (Eds.), *Literature, Languages and Linguistics* – Abstract Book, from the 4th Annual International Conference on Literature, Languages and Linguistics, July 11-14th, 2011, Athens, Greece, The Athens Institute for Education and Research.

NEW HEALTH ADVICE: HEALTH FORUM SITES AS A CHANGE OF DISCOURSE FRAME, FROM DOCTOR-TO-PATIENT TO USER-TO-USER

Marianna Lya Zummo
Department of Human Sciences
University of Palermo

Abstract

Health forum communities form support groups responding to the need for information. Participants in these communities find a space in which they share experiences and feelings, and are able to recount their success stories and failures according to a 'gather, share and learn' paradigm. One of the main worries concerning these spaces has been the unmonitored information that is provided by users who do not/ cannot take responsibility for what they say.

Previous studies were intended to explore how individuals with health issues use health-related online communities to access information and support. This research, on the other hand, examines the extent to which health advice may be conversational, analysing how participants construct their stances. In particular, this paper presents results reflecting a shift from a doctor-to-patient frame to a user-to-user frame in terms of authorship and responsibility for online claims and statements.

This paper attempts to understand how health communication is changing in an online environment.

1. Introduction

Although healthcare professionals still provide the primary source of health information, 80% of Internet users have looked for health information online (Fox, 2011). One of the many reasons lay persons rely on other lay persons on health information websites is that they are dissatisfied with the information received from their physicians (Eysenbach and Diepgen 1999; Himmel et al. 2005). The principal sources of this dissatisfaction include the perception of professional incompetency on the part of doctors (Umefjord et al. 2003), treatment delays or failure and empathetical problems with the doctor (Homewood 2004). Lay persons therefore turn to online forums to find information or emotional support (Lee and Hawkins 2010). Findings show an overall positive effect of using forums, to the extent that users

are better able to cope with the situation they are facing. According to the literature (Tanis, 2008), users also appreciate the features of computer-mediated communication because, for example, it safeguards their anonymity (particularly acknowledged by those who feel stigmatized) or a virtual consultation via the network (for those with restricted mobility). However, critics question the quality of online health information, and the influence of the Internet on health beliefs and behaviours.

2. Background

2.1. On participants as health consumers

Forum participants may be defined using four criteria: people, purpose, policies and computer system (Preece, 1998: 10). As a result, online communities consist of individuals performing roles and satisfying their needs, with the purpose of exchanging information and common interests. The community interacts within a structure that has its own rules and norms, guiding interaction in a computer-mediated environment that facilitates a sense of togetherness. Each participant has an active role as the users may ask the community for help or provide help and advice for others. The connection among users is established by the condition or symptoms, side effects or syndrome. Similarly, Herring (2004, 351-352) proposes six sets of observable criteria that can justifiably label a web-based environment as a community. These are: 1) active participation and a core of regular participants; 2) shared history, purpose, culture, norms, and values; 3) solidarity, support, reciprocity; 4) criticism, conflict, means of conflict resolution; 5) self-awareness of group as entity distinct from other groups; 6) emergence of roles, hierarchy, governance, rituals. The main aim of these online health communities is to offer empathic support to participants. In fact, 'patients' perceived empathy' is considered to be critical to patient recovery, specifically, by enhancing the patient's compliance with treatment protocols and the pace of healing' (Nambisan, 2011). However, it is the information seeking effectiveness rather than the social support which affects patient's perceived empathy in online health communities. In the context of online health communities, patients (health consumers) usually narrate their experiences in their queries to other members. Participants often give information and emotional support through the use of personal narratives dealing with their own experiences. Even when information and advice is provided, accounts are often concluded by the telling of a personal story of past mistakes or triumphs. To sum up, storytelling is a strategy that reveals a tendency to disclose personal information, also known as the digital disinhibition effect (Deffenbaugh, 2010). Research shows that members of self-help groups bond because of compelling

shared circumstances, and that these groups stress the importance of mutual support (Forsyth, 1999).

Consistent debates have accompanied the growing popularity of online communities, for example regarding the degree to which participants have taken and shown responsibility towards the use of their posts. In fact, one of the main worries concerning these forums has been the uncontrolled information provided by users who do not have any medical training.

Healthcare seems to be an area where online communities can add real value to professionals, patients and families since this online space is a place for individuals with health issues to be sharing their experiences and stories and finding and connecting with others in a similar situation.

One significant limitation of these forums is that participants do not have a clear idea of the identity or qualifications of those with whom they share information. Despite the benefits of the Internet, this form of communication also gives rise to new forms of health risk for some users. Culver et al. examined an electronic bulletin board for people with painful hand and arm conditions (Culver et al., 1997). Results illustrate that messages on medical topics were from people suggesting unconventional treatments and solutions, without any medical training.

2.2. Why use a forum?

A health forum is defined as a kind of social network where users share information on specific topics. Research has focused mainly on community structure (Dias, Chomutare, & Botsis, 2012) or on the relationships between the social and technological aspects of online health support communities (Preece and Moloney-Krichman, 2005).

Several approaches have been taken, from the ethnographic one (Baym, 2000; Mynatt et al., 1998), to message analysis (Preece and Ghozati, 2001; Herring, 1996), group dynamics analysis (Korenman and Wyatt, 1996), and analysis of communication patterns (Quan-Haase et al., 2002).

The dynamics and motivation of use for such forums are still uncertain. Nevertheless, the dissemination of such forums is the result of a growing interest in them. Quite often, the forum is used by the participants to comment on the diagnosis made during medical examinations, as if to seek a second opinion from a multitude of participants. The forum may be used to understand what has been previously read about a given condition or to reinterpret what the doctor has tried to explain. In this case, the forums contain explanations of scientific terms, acronyms and insights into the processes involved in pharmaceutical treatment. Institutions have learnt to view these forums as potential partners for patient care, recognizing their power to manage patients' conditions. Participants in these forums do not act as passive but rather as active individuals (participants rather than patients) who try to contribute to their own health outcomes. Considering the credibility that is

attributed to these forums, it is important to consider them also in relation to speculative and commercial interests, providing misleading or even harmful information. In these terms, an account of responsibility is needed.

3. The Forum as a corpus for data collection

Forums are created as virtual spaces in which community participants and occasional users connect with others by symptoms, side effects, syndrome or disease. As an active participant, the user may find a support group and a space in which to tell a story, share experiences, feelings, success stories and failures. The Home page is the heart of the forum because it contains the message index between community members. It also includes different boxes in which videos, blogs, articles and news are provided together with miscellaneous information (how to join, the purpose of the site, etc.).

The corpus for this study contains texts from three specific health-related sites and one generic site with a health sub-page forum. Posts are organized in discussions (threads) consisting of initial posts and replies. Moderators explain the purpose of the community and explain norms of behaviour. In particular, moderators indicate how people should interact, ways in which community members may contribute to the group, and advise users to refrain from inappropriate comments, although there are no guidelines concerning acceptable levels of free speech or netiquette. Members can post or reply to messages related to health issues. Topics discussed include medical and surgical treatments, side effects, news, client-provider relationships, and advocacy issues.

For this study, the forums were selected in order of appearance on a common search engine and only those with free access were used. Threads were chosen by the number of total views/replies at time of analysis. The initial threads and the corresponding replies were selected and analysed. A total of 547 posts (total number of words: 83,423) were selected from four threads as the final corpus. The length of posts varied considerably ($129<x<2143$ words per post) taking into account only the full texts: user nicknames and date/time of logging were removed.

4. Theoretical Background and Procedure

The main objective of this study is the investigation of the participants' visibility and degree of commitment. Healthcare discourse is often of a speculative nature: diagnosis may differ between doctors and patients and from one case to the next. Producing hypothesis, the speaker is involved in an interpretation of the reality to which (s)he has a degree of knowledge.

Epistemic modality considers the degree of the speaker's commitment to the proposition, while evidentiality is concerned with the source of information available to the speaker. Evidentiary validity and degree of certainty are therefore two parameters to be analysed in order to identify the degree of author commitment to the validity of the information. With the aid of micro-linguistic analysis, this study investigates linguistic resources that examine the use of mood markers and evidentiality in order to identify patterns in online health discourse.

Epistemic modality has been studied to identify verbal and non-verbal markers of possibility and certainty according to literature (Van der Auwera and Plungian, 1998; Nuyts, 2001; Bybee et al. 1994; Cornillie 2009, among others). Nuyts (2001: 2) defines epistemic modality as the evaluation of the chances that a state of affairs will occur, thus involving the writer in a marked commitment to the truth of a proposition (Bybee et al. 1994: 179). This evaluation contains a scale that runs from "the absolute certainty that a state of affairs is real to absolute certainty that it is not real" (Cornillie 2009: 46). Probability and possibility are included between these extremes.

The domain of epistemic modality has been studied with respect to its rhetorical use, as in Kranich (2009:30), arguing that modalisation is a hedging device used by speakers for non-threatening interventions. Epistemic necessity (must, cannot) expresses a higher degree of certainty (there is one possible conclusion to be drawn from the facts), while epistemic possibility (may, might) expresses a low degree of certainty (facts that lead to speculation). Markers of possibility include statements like: 'All of the symptoms you have could be a migraine'; 'This may work for some of the readers'; markers of certainty include: 'I'd definitely suggest […]', 'There must be some way to mimic pregnancy to keep migraine away'. A third subgroup, epistemic probability expressed by will, would, should, may be considered. Their status is controversial in that it is sometimes difficult to differentiate between epistemic 'will' (reasonable to expect) and the marker 'will' for future actions. This perplexity extends to the other markers of epistemic possibilities as well.

To ascertain the type of source used by the speaker to evaluate their utterance, evidentiality markers were identified (Chafe and Nichols, 1986). Direct evidence (perceptual markers and beliefs) and indirect evidence (inference and reasoning) jointly express the speaker's commitment to the truth of the utterance, both cognitively and perceptually. Evidentiality markers are considered to be 'perceptual' when the writer or speaker has direct sensory access to the truth or when information can be inferred (expressed by verbs such as 'hear', 'see', 'seem' etc.) whereas markers are considered to be of a 'cognitive' nature when information is given by mental processes such as deduction or is founded on a cognitive basis, belief or general knowledge (expressed by verbs such as 'assume', 'remember', 'know'). Another subdivision is provided by De Haan (2001) who puts

forward the classifications of direct/indirect and firsthand/secondhand evidence, where indirect evidence incorporates that which is quoted, while inferential evidence refers to the personal but indirect access to information.

In light of this, markers of evidentiality were chosen with the intention of identifying how the individual types of knowledge are represented within the corpus. In addition, in order to study the level of commitment, it was felt to be important to combine the dimension of evidentiality with the dimension of modality. The two domains are in fact intertwined because, as Mushin (2001: 58) suggests, speakers adopt a particular epistemological stance on the basis of their source of knowledge, their rhetorical intentions, and the ways in which they seek a response to their utterance at the moment of interaction.

The expression of authorial stance is studied on the basis of an analysis of pronominal self-reference items, adjectives and grading adverbs. Authorial stance is the author's point of view on the material to which they are referring (Hyland, 2002). Biber defines it as "the ways in which an author or speaker overtly expresses attitudes, feelings, judgements, or commitment concerning the message" (1988, 204). According to Hyland (2002, 1093), people do not simply 'report findings or express ideas in some neutral, context-free way, but employ the rhetorical resources accepted for the purposes of sharing meanings in a particular genre and social community'. Former investigations on the use of disclaimers and hedges to limit responsibilities as to the reliability of the information given were based on Research Articles, which are known to be the means through which a community, the scientific and academic communities in particular, shares knowledge within itself.

Authorial stance, or the expression of writer's attitudes, judgements and opinions has become a widely debated issue in the works of discourse analysts working on different genres of academic discourse (Swales 1990, 2004, Hyland 2001, 2005). For example, Hyland (2002) examined the frequency and role of first person pronouns and determiners to show the degree of authority writers invest in their texts to personally uphold their own statements. In this paper, whether or not writers take responsibility for the information or evaluations provided in their posts is questioned. Assuming that the use of the first person pronoun expresses credibility and helps writers to establish commitment to their claims, the study examines the frequency and role of first person pronouns *I* and *we* in their various forms (subject, object and possessive) these pronouns are discussed as role markers and authorial presence together with adjectives and grading adverbs. Adjectives are used to express evaluation, and grading adverbs are used with adjectives to show that something or someone has more or less of a certain quality. A word list was generated to determine which adjectives and adverbs had been used, secondly, concordances were generated in order to see the context in which words appeared. As to the study of authorial *I/we*, five functions were studied: (i) explaining a procedure/word; (ii) expressing sympathy; (iii) hedging a proposition/claim; (iv) elaborating an argument;

(v) stating results/making knowledge claims (such as '*I* can tell *you* for sure that...'; '*I* know from *my* experience') and (vi) narrating personal stories. Finally, the categories to which the authorial stances occurred were assigned. While comparing the choices of users, the study explores the reasons for the differences between the frequency of use and functions of first-person pronouns in the discourse under investigation.

5. Findings

5.1. Writer visibility: authorial stance and commitment

Authorial stance is the authors' viewpoint on the material to which they are referring. This study examines whether or not writers take up positions for the information or evaluations provided in their posts. In other words, the study considers whether there is a certain degree of authoritativeness that writers are prepared to invest in their texts to personally support their statements. This is most typically accomplished through a range of rhetorical and linguistic resources, variously called appraisal (Martin, 2000), evaluation (Hunston and Thompson, 2000), and stance (Hyland, 1999), which allow writers to take up positions and express judgements. Writers point to the use of *I* as critical to meaning and credibility. The use of the personal pronoun also helps writers to establish a commitment to their words and to create a rapport with their readers.

The analysis of the corpus revealed that writer visibility was mainly expressed (see Table 1) by the first singular person pronoun (92.71%), in particular in its subject form (72.61%), possessive form (10.92%) and as object form (9.18%).

Table 1 – Writer visibility. Percentage of use of first person pronoun in its various forms

	Percentage
I	72.61
Me	9.18
My, mine	10.92
We	4.22
Us	1.25
Our, ours	1.79

As regards the functions and the frequency of use, Table 2 shows that 'Stating sympathy' reaches the highest value, followed by 'Narration'. The functions mainly related to the expression of commitment toward the information

Table 2 – Writer visibility in health forum exchanges. Occurrences per thousand words

			I			*We*	
	Total	*Subj.*	*Obj.*	*Possess.*	*Subj.*	*Obj.*	*Possess.*
Explanation	4,04	2,96	0,31	0,45	0,14	0,02	0,14
Stating sympathy	32,98	23,81	3,22	2,55	1,84	0,65	0,89
Hedging	1,39	1,28	0,03	0,04	0,02	-	-
Elaborating an argument	6,18	4,73	0,45	0,71	0,17	0,06	0,03
Statingresults/making knowledge claims	4,57	3,47	0,39	0,44	0,20	0,06	-
Narration	14,11	9,69	1,40	2,68	0,27	0,01	0,03

(Explanation, Elaborating an argument, Stating results or making knowledge claims and even Hedging) have very low values in percentage terms.

The present categorisation of discourse functions of personal pronouns in healthcare forum exchanges shows a diminishing level of authority expressed by the authorial presence.

In other words, it seems that comment users adopt their own visibility for the purpose of sharing personal stories and attest sympathy without putting themselves forward as experts to influence or persuade their readers. The analysis shows that despite a marked tendency to create a rapport between writer and reader, the writers generally tend not to construct a leading authorial visibility. Arguably the writers of the posts choose not to adopt authorial stances because they are conscious of a lack of expertise and are reluctant to commit themselves explicitly to their claims. On the other hand, it is true that constructing a sentence without explicitly expressing the subject, increases the perception of neutral, objective truth of the utterance (Gotti, 2005: 96). Again, it seems that in health care forum exchanges, conversations are aimed at sharing emotions instead of sharing information. Users face issues related to the specificities of medical discourse in conversational tones without a marked authorship. Additionally, it seems that the users do not wish to replace the primary care physician but tend to add information to what they have been told by their doctor.

5.2. Taking responsibility: commitment toward utterances

A forum may be open to all net users or just to a small group of people. Allowing free access to a forum, certainly, does not determine who will read or contribute to the forum. Moreover, in health care forums in particular, discussions are explicitly based on the idea that the information provided is

designed to support, not replace, the relationship between the participants and their physicians. These forums represent a social setting in which group relations are created, trust is developed, and informal learning takes place. But what responsibility is taken for the advice being offered remains unknown.

The measure of evidentiality is shown in Table 3, whereas Table 4 reflects the level of modality communicated through epistemic verbal and non-verbal markers.

Table 3 – Dimension of evidentiality in health forum exchanges. Values for each sub-corpus (C1-C4) expressed in raw numbers and percentages

	C1	*C2*	*C3*	*C4*	*Total*	*Percentage*
Cognitive Markers	91	30	6	40	167	44.66%
Perceptual Markers	21	7	4	42	74	19.78%
Mediated Markers	51	15	2	65	133	35.56%

As the tables show, a higher amount of cognitive markers is revealed by an analysis of the dimension of evidentiality in the corpus (x: 167 raw occurrences, corresponding to 44.66% total occurrences). This means that the participant acquires the information as an outcome either of endophoric means (common knowledge or predicates of belief) or mental stages (generalization, deduction).

Sensory access markers do not appear as frequently (x: 74 raw occurrences, corresponding to 19.78% total occurrences). Secondhand evidence refers to information obtained from another source (see Table 4), the agent often being the healthcare professional (physicians, chiropractors, neurologists; 89 total occurrences, 66.92%), less frequently lay persons (29 total occurrences, 21.80%) and anonymous friends (4 total occurrences, 3%), and rarely studies or scientific articles (11 total occurrences 8.27%) for 35.56% of total occurrences.

Table 4 – Secondhand evidence refers to information obtained from another source. Values expressed in percentages

	Percentage
Healthcare professionals	66.92%
Laypersons	21.80%
Friends	3.00%
Scientific studies	8,27%

Regarding the epistemic modality identified in the corpus, Table 5 highlights the fact that expressions of possibility outweigh those of certainty, both for verbal and non-verbal markers. In the corpus, epistemic possibility appears in 92.48% of cases, and was most apparent in verbal occurrences, at 0.33%, whilst the lowest incidence was found for certainty, at 7.52%.

Table 5 – Dimension of epistemic modality in health forum exchanges. Values for certainty (verbal and non-verbal markers) and for possibility (verbal and non-verbal markers) expressed in raw numbers and percentages

	Verbal markers	*Non-verbal markers*	*Total*	*Percentage*
Certainty Markers	3	14	17	7.52
Possibility Markers	166	43	209	92.48

The results indicate that participants offer suggestions that are drawn from mental processes and general knowledge, very often reporting mediated data ('my doctor said/suggests/thinks'; 'a study confirms/indicates' etc.). As suggested by Fitneva 2001), cognitive resources cannot provide a solid certain background, therefore participants tend towards a dimension based on possibility and probability.

3. Some examples of posts in health forums

The quantitative data have identified the contributors' authorship in comments exchanged in a health forum context, focusing in particular in the author's presence and discourse functions, positioning and commitment. Findings suggest that, despite a discrete presence of first person singular prononuns, commitment is often excluded when elaborating an argument or claiming knowledge, and it is used mainly for empathy/sympathy assertions. The analysis reveals that respondants frame their comments within some characteristics that are, namely, the absence of authorship, disclaimers of expertise, use of personal stories with anecdotal functions, explicitation that the truth or reliability of these comments are not based on fact or research, suggestion for medical tests and face-to-face medical visits. Comments tend to be of a conversational nature and very often statements contain markers of generalization and general belief as well as hesitancy and lack of certainty. To illustrate, some examples taken from some respondants' comments follow. The original post was from a woman struggling with vestibular migraine. The post contain a personal and emotive narration of facts, victimization, frustration (a):

(a) Anyone out there diagnosed with vestibular migraines? These are migraines without a headache (sounds silly). I get dizzy / feel off balanced, confusion, nausea, blurred vision, sensitivity to bright lights, ear pressure, mild sinus pain. (I have not been diagnosed with vestibular migraines, my doc only told me that this was dizziness due to migraines. I came up with the vestibular part thru my own research.)
It comes on out of the blue very strongly and lasts about 3 hours. After that I feel exhausted and very emotional.
This last time I have had the symptoms for 2 weeks (not as severe as with an attack) I come in and out of it, sometimes feel better than others.

My neurologist says my MRI & EEG are fine. She had me try Topamax & Diamox which did not help.
Today she said that she did not know how to help me any further and referred me to another doc.
Do any of you suffer from this? Have you even heard of it? Any help would be great, I am getting so discouraged and this is negatively affecting my work.
Many Thanks!

This post received a good number of comments in which respondants use personal stories, engage with parallel discussions and, more than that, try to answer offering information and giving suggestion. However, users explicitly minimize their contribution (b) and elicit a proper medical consult (c):

(b) *Are you seeing a neurologist who specializes in migraines*? It sounds like you have a very complex case and need *a really good neurologist* with a speciality in migraine headaches. *I wish I had better advice. I can only say my thoughts and prayers are with you.*

(c) I have heard of Vestibular Migraine but have not come across anyone who suffers from it until now. *Are you being referred to a Headache Specialist?? If you are not, my advice would be to insist upon it*! I am currently being assessed by a Neurologist who is a Headache Specialist. *Who better to understand headache and the variety of headache that there is, especially the rarer types like yours, than a Headache Specialist?*
Sorry, don't mean to be bossy but just my thoughts! Keep in touch and let us know how you get on.
take care

In (d) the respondant, despite giving some indications on medications and dosage, takes for granted a new medical consult with a neurologist or headache specialist, especially in his closing. It is clear that users do not replace the specialist.

(d) Welcome. Wow, your symptoms sound exhausting and the fact your neurologist gave up sounds like a cop out. Obviously something serious is going on. Hopefully *the next neurologist or headache specialist are more informed or more pervassive, wanting to find the cause and a proper treatment.* If these episodes are migraines a triptan migraine might help them. These include medications such as Zomig, Imitrex, Amerge, Axert. It depends on you *and* your doctor's preference as to which you take. In addition, did you give Topamax some time to work and did you slowly increase the dosage? Topamax works at different dosage levels for different people. I take 100 mg / day but some people find it effective at 250 mg / day. You have to build up to that slowly otherwise you can suffer some nasty side effects.
*Good luck at your next appointment. Hopefully the next doctor is more helpful*l.

In (e) the user offers his/her own experience to suggest the use of a natural medication. The post explicity disclaim any factual knowledge.

(e) A couple of days after the dizzy spells I had a massage. I don't know what the name of the technique is, but its purpose is to return the muscled to their normal position. It only

takes about 15 mins. Interestingly the masseur said that I was in a much worse shape than he has ever seen me. At about the same time *I started taking Olive Leaf Extract, going to the gym more regularly and to yoga once a week. I have not had any migraine symptoms since then* (touch wood). *Not sure if it was the massage, the Olive Leaf Extract, the gym or something completely different, but I thought I share my experience* as I have not had to use any drugs and it may give people other avenues to expolre on the way to recovery.

In general, knowledge of facts is attributed to other source as in the following examples (f1-f3):

(f1) *My chiropractor says* that I have VERY bad scoilosis and have some compression of some disks in my spine and also have spurs and fractures in my neck.

(f2) *Studies indicate* that people with migraine are much more likely than other people to experience severe motion sickness and may be more likely to suffer from Meniere's disease or BPPV.

(f3) There is *a book* that contains the "migraine diet" and it is also listed at this *web page* [*link*].

When users offer solutions or suggestion, their comments are of a conversational tone with a certain level of uncertainty and hesitancy as in the following examples (g1-g4):

(g1) *cant tell if* this new pill is working "veramapil" but its been 6 nights i can sleep. hope its the end of my cycle *but maybe* its the veramapil. *whos knows eh.*

(g2) swelling and fullness in ears? *I would try* a few drops of hydrogen peroxide in the offending ear, and let it bubble a bit, *maybe 30 seconds*, then tilt your head to drain it out onto a kleenes, washcloth or whatever. Then *I would put* a few drops of rubbing alcohol in to help it dry out. That part of your diagnosis *sounds like* an ear infection type thing and drops of alcohol is what we received when we were kids getting out of the pool. the alcohol got the excess moisture out so we didn't get an ear infection. *I don't know of any negative results from doing this, so at least you will have cleaner ears*.

(g3) *Perhapse* the ear fullness is a side effect of migraine (the kind without any pain in your case), or visaversa.

(g4) *I think I would approach* your symptoms one at a time.

Even when they appear to know the medical reason for an unusual behaviour or symptom, they always take a hedged position and, again, press for a medical advice, as in (h) or rely on general ideas (i):

(h) You mentioned in your post about having to pee a lot and drinking lots of water. These symptoms with confusion, slurred words, and headaches *could all be indicative* of diabetes. Have you ever discussed these symptoms or diabetes *with your doctor*? *Have you been tested* for diabetes? (i.e. fasting blood glucose test?) You may want to investigate if you haven't. Blood sugar can really affect headaches and left untreated diabetes *can* be serious.

(i) I *know* when you go to bed at night it is hard for you to sleep because you never know which way to place your head on the pillow to keep from getting dizzy.

These examples suggest that posts are not intended to replace a medical advice or face-to-face medical consult, evenf if sometimes posts can be very directive and advice against doctors' suggestion, such as (l), using personal narratives as anecdotal warning:

(l) thornapple, i would *reccomend* that you stay away from topamax altogether *whether or not your family doctor advised you to take it*. i reacted quite severely to it and lost my ability to read(accomodative focus), and was generally a drugged up zombie. one day i was looking for where i parked my car [personal story follows].

Forums therefore are not used in place of a medical consult but as group discussion, in which participants find information and solidarity. Very often talking about health problems becomes a way to self treat without taking drugs. However, users are conscious that taking up position about medical issues without being an expert can be dangerous (other than ethically disputable) so agency is relevant only in particular discursive functions apart from giving medical advice. Health forums are therefore group discussions in which people share personal stories, give and offer health/medical experience, offer sympathy and solidarity and press for 'healthy' behaviours, such as doing medical testing and talk to specialists. Forums are eventually used as in (m):

(m) When I saw rumors of Janet Jackson suffering from vestibular migraines, I did a little searching to see if there was a new treatment besides the sleepy drugs and found this forum. This may work for some of the readers. When you find something good, you share it so others can be helped.

6. Conclusions

The increasing use of forums providing healthcare information involves a paradigm shift. These forums are compiled and organized by participants who do not act as passive but rather as active individuals who try to contribute to their own health. Considering the credibility that is attributed to these forums, it is necessary to avoid any form of speculative interests, harmful behaviour or misleading information. With the intention of replacing a medical consultation and avoiding a face-to-face visit, patients tend to use blogs as a means of obtaining a diagnosis and receiving advice on treatment. The forums may lead the participants to take that information and use it for a specific personal health issue. As a result forums may produce a shift of information from doctor-to-user to user-to-user.

This paper examines whether writers take up positions concerning the information or evaluations provided in users' posts. Assuming that the use of the first personal pronoun expresses credibility and helps the writer to establish commitment to their words, the personal pronouns I and we in their various forms (subject, object and possessive) are discussed as role markers

of authorial presence together with expressions of commitment marked by modality and evidentiality.

The analysis of the corpus revealed that writer visibility was mainly expressed by the first person singular pronoun, with the principal function of 'Stating sympathy'. The functions mainly related to the expression of commitment toward the information (Explanation, Elaborating an argument, Stating results or making knowledge claims) are not extensively represented. The difference in the use of discourse functions of personal pronouns may be explained by the writer's self-perceived lack of authority in scientific matters. Despite a marked tendency to create a rapport between writer and reader, the writers generally do not construct authorial visibility. Arguably writers of these posts avoid authorial stances because they are conscious of their lack of expertise and, therefore, refrain from committing themselves explicitly to their claims. This hypothesis is reinforced by the analysis of the two parameters used to investigate the dimension of author commitment to the validity of the information, evidentiary validity and degree of certainty. A larger number of cognitive markers is revealed by an analysis of the dimension of evidentiality, meaning that the participant acquires the information as an outcome either of endophoric means (common knowledge or predicates of belief) or of mental stages (generalization, deduction). Secondhand evidence consists of information from a quoted source, often the physician, less frequently friends, and rarely scientific studies. Cognitive resources cannot provide certainty (Fitneva, 2001), therefore users tend towards a dimension based on possibility and probability. These results suggest that users are aware of the limitations of their own medical knowledge and may perceive the importance of their suggestions when offering help, limiting the expression of authorship and certainty.

7. Limitations and ethical considerations

The researcher chose to remain in a purely observational mode, and did not comment on or post any messages. No contact was established between the researcher and forum users and no questionnaire was administered. The researcher is unaware of the message authors' identities, and all names and points of contact were removed from the messages before the analysis was carried out in order to respect individual privacy rights.

References

Baym N.K. (2000) *Tune in, Log on: Soaps, Fandom, and Online Community*. Thousand Oaks, CA, Sage Publications.

Biber D. (1988) *Variation across Speech and Writing*. Cambridge, Cambridge University Press.

Bybee J.L., Perkins R. and Pagliuca W. (1994) *The Evolution of Grammar: Tense, Aspect, and Modality in the Languages of the World*. Chicago and London, the University of Chicago Press.

Chafe W. and Nichols J. (Eds. 1986) *Evidentiality: The Linguistic Coding of Epistemology*. Norwood, NJ, Ablex.

Cornillie B. (2009) "Evidentiality and Epistemic Modality: On the Close Relationship of two Different Categories". *Functions of Language* 16(1), pp. 44-32.

Culver J.D., Gerr R. and Frumkin H. (1997) "Medical Information on the Internet: A Study of an Electronic Bulletin Board". *Journal of General Internal Medicine 12*(8), pp. 466-70.

De Hann F. (1999) "Evidentiality and Epistemic Modality: Setting Boundaries". *Southwest Journal of Linguistic* 18, pp. 83-101.

Deffenbaugh D.G. (2010) "Born Digital: Understanding the First Generation of Digital Natives – By John Palfrey and Urs Gasser", *Teaching Theology and Religion* 13(4), pp. 381-384.

Dias A., Chomutare T. and Botsis T. (2012) "Exploring the Community Structure of a Diabetes Forum". *Stud Health Technological Information* 180, pp. 833-837.

Eysenbach G. and Diepgen T.L. (1999) "Patients Looking for Information on the Internet and Seeking Teleadvice: Motivation, Expectations, and Misconceptions as Expressed in e-Mails Sent to Physicians". *Archives of Dermatology* 135(2), pp. 151-156.

Fitneva S.A. (2001) "Epistemic Marking and Reliability Judgements: Evidence from Bulgarian". *Journal of Pragmatics* 33, pp. 401-420.

Forsyth D.R. (1999) *Group Dynamics*, 3rd Ed. Belmont, CA, Wadsworth Publishing Company.

Fox S. (2011) "The Social Life of Health Information". *Pew Internet and American Life Project*. Available at *http://www.pewinternet.org/Reports/2011/Social- Life-of-Health-Info/Summary-of-Findings.aspx*.

Gotti M. (2005) *Investigating Specialized Discourse.* Bern, Peter Lang.

Herring S.C. (2004) "Computer-Mediated Discourse Analysis: An Approach to Researching Online Behavior" in Barab S., et al. (Eds.), *Designing for Virtual Communities in the Service of Learning*. New York, Cambridge University Press, pp. 338-376.

Herring S.C. (1996) "Two Variants of an Electronic Message Schema" in Herring S.C. (Eds.), *Computer-Mediated Communication: Linguistic, Social, and Cross-Cultural Perspective*. Philadelphia, PA, John Benjamins, pp. 81-106.

Himmel W., Meyer J., et al. (2005) "Information Needs and Visitors' Experience of an Internet Expert Forum on Infertility". *Journal of Medical Internet Research* **7**(2), p. 20. Retrieved March 19th, 2012 from *http://www.jmir.org/2005/2/e20/.*

Homewood J. (2004) "Consumer Health Information e-Mails: Content, Metrics and Issues". *Aslib Proceedings* 56(3), pp. 166-179.

Hunston S. and Thompson G. (Eds. 2000) *Evaluation in Text: Authorial Stance and the Construction of Discourse.* Oxford, Oxford University Press.

Hyland K. (1999) "Disciplinary Discourses: Writer Stance in Research Articles" in Candlin C. and Hyland K. (Eds.), *Writing: Texts, Processes and Practices.* London, Longman, pp. 99-121.

Hyland K. (2001) "Humble Servants of the Discipline? Self-Mention in Research Articles". *English for Specific Purposes* 18, pp. 207-226.

Hyland K. (2002) "Authority and Invisibility: Authorial Identity in Academic Writing", *Journal of Pragmatics* 34, pp. 1091-1112.

Hyland K. (2005) *Metadiscourse: Exploring Interaction in Writing*. London and New York, Continuum.

Korenman J. and Wyatt N. (1996) "Group Dynamics in an e-Mail Forum" in Herring S. (Ed.), *Computer-mediated communication: Linguistic, social and cross-cultural perspectives*. Amsterdam, J. Benjamins, pp. 225-242.

Kranich S. (2009) "Epistemic Modality in English Popular Scientific Texts and Their German Translations". *Trans-kom* 2(1), pp. 26-41.

Lee S.Y. and Hawkins R. (2010) "Why Do Patients Seek an Alternative Channel? The Effects of Unmet Needs on Patients' Health-Related Internet Use". *Journal of Health Communication* 15(2), pp. 152-166.

Martin J.R. (2000) "Analysing Genre: Functional Parameters" in Christie F., and Martin J.R. (Eds.), *Genre and Institution.* London, Continuum.

Mushin I. (2001) *Evidentiality and Epistemological Stance. Narrative retelling.* Amsterdam, John Benjamins.

Mynatt E.D., O'Day V.L., et al. (1998) "Network Communities: Something Old, Something New, Something Borrowed". *Computer-Supported Cooperative Work: The Journal of Collaborative Computing 7*(1-2), pp. 123-156.

Nambisan P. (2011) "Evaluating Patient Experience in Online Health Communities: Implications for Health Care Organizations". *Health Care Manage Rev* 36(2), pp. 124-33.

Nuyts J. (2001) *Epistemic Modality, Language, and Conceptualization: a Cognitive-pragmatic Perspective*. Amsterdam, John Benjamins.

Preece J. (1998) "Empathic Communities: Reaching out Across the Web". *Interactions* 5(2), pp. 32-43.

Preece J. and Ghozati K. (2001) "Observations and Explorations of Empathy Online" in Rice R.R. and. Katz J.E. (Eds.), *The Internet and Health Communication: Experience and Expectations.* Thousand Oaks, CA, Sage Publications, pp. 237-260.

Preece J. and Maloney-Krichmar D. (2005) "Online communities: Design, Theory, and Practice". *Journal of Computer-Mediated Communication* 10(4), pp. 00 article 1. Available at *http://jcmc.indiana.edu/vol10/issue4/preece.html.* Accessed November 5th, 2010.

Quan-Haase A., Wellma B., et al. (2002) "Capitalizing on the Net: Social Contact, Civic Engagement, and Sense of Community" in Wellman B. and Haythornthwaite C. (Eds.), *The Internet in Everyday Life*. Malden, MA, Blackwell, pp. 291-324.

Swales J.M. (1990) *Genre Analysis: English in Academic and Research Settings.* Cambridge, Cambridge University Press.

Swales J.M. (2004) *Research Genres: Explorations and Applications*. Cambridge, Cambridge University Press.

Tanis M. (2008) "Health-Related On-Line Forums: What's the Big Attraction?" *Journal Health Communication* 13, pp. 698-714.

Umefjord G., Petersson G. and Hamberg K. (2003) "Reasons for Consulting a Doctor on the Internet: Web Survey of Users of an Ask the Doctor Service". *Journal of Medical Internet Research* 5(4), p. 26. Available at *http://www.jmir.org/2003/4/e26/.*

Van der Auwera J. and Plungian V. (1998) "Modality's Semantic Map". *Linguistic Typolology* 2, pp. 79-124.

APOMEDIATED COMMUNICATION IN MEDICINE 2.0: A MULTIMODAL DISCOURSE STUDY OF PATIENT EMPOWERMENT

Anna Franca Plastina
Department of Pharmacy, Health and Nutritional Sciences
University of Calabria

Abstract

The Medicine 2.0 drive for personalized healthcare is shifting the traditional physician-centred model of care towards the questionable patient-centred practice of apomediation. Thanks to technological advancements, human patients can now engage in real-time, multimodal dialogue with virtual agents for self-diagnosis. Physicians acting as gatekeepers of medical knowledge and as trusted intermediaries are thus being replaced by these apomediaries for increased patient empowerment. This chapter questions whether patient empowerment is constructed, or perhaps, deconstructed in apomediated environments by looking at: a) the ways in which resemioticisation operates in apomediated multimodal discourse; b) the choice of intersemiotic relations made for well-informed apomediated communication. Taking the case of the apomediated environment of symptom checkers, the study adopts a social semiotic approach to multimodality to analyse the key processes of resemioticisation and intersemiosis in this environment. Resemioticisation was found to be shaped by the construal of indexical meaning to facilitate patients' understanding in the shift from intermediation to apomediation, starting at the pretextual level. Intersemiosis was mediated mainly through the written mode, which subordinated all other modes with a consequent unequal semiotic status; logico-semantic relations were mostly constructed to expand and project meaning. Overall, findings highlight how the apomediated symptom checker strenuously engaged in these processes to affirm its scientific credibility, and therefore gain patient trust. Apomediation thus appears to subvert mainstream understanding of patient empowerment due to the lack of co-responsibility and co-decision making. Far-reaching consequences of apomediated self-diagnosis can be envisaged not only for patient disempowerment, but more importantly, for placing patients' health at risk.

1. Introduction

The phenomenal improvement of communication and collaboration via social networking developed by Web 2.0 is rapidly affecting the landscape of Medicine, spawning the so-called era of Medicine 2.0:

Medicine 2.0 is the use of a specific set of Web tools (blogs, podcasts, tagging, search, wikis, etc.) by actors in health care including doctors, patients, and scientists, using principles of open source and generation of content by users, and the power of networks in order to personalize health care, collaborate, and promote health education (Hughes et al. 2008).

Medicine 2.0 is pushing the traditional physician-centred model of care towards a questionable patient-centred paradigm. In the Web 1.0 era of the early 2000s, patients acted as passive consumers of medical information online. The danger of misinformation, which started to be questioned at that time, has now become a serious concern in the current Web 2.0 era. This is mainly due to the readiness with which any user can actively create and distribute medical content by means of interactive Web 2.0 technologies. In this respect, Pittler et al. (2011) warn that there is an unprecedented change in how medical information is controlled and distributed, and that the danger of misinformation has risen dramatically. Thus, while «until the recent past, accessing health information mainly relied on patient-expert interaction and on the use of special dictionaries as credible sources» (Plastina 2012: 98), Medicine 2.0 is now raising «[…] ethical concerns about inaccurate or misleading information [and] damage to the doctor-patient relationship […]» (Lo & Parham 2010: 17). In this new scenario, the key issues of patient empowerment, the changing role of patients and their trust in online medical information deserve particular attention.

Mainstream understanding of patient empowerment considers it «[…] as helping patients discover and develop the inherent capacity to be responsible for one's own life» (Funnell & Anderson 2004: 124). Empowerment is considered as a prerequisite for health by the World Health Organization, and certainly, represents an important step in turning passive patients into active partners who take co-responsibility for the management of their health conditions. Yet, several misconceptions have shown that increased patient empowerment is not always beneficial (Anderson & Funnell 2010). For example, Bos et al. (2008) advocate that Medicine 2.0 has steered the active participation of health consumers in their own medical care, creating the phenomenon of «Patient 2.0 Empowerment». In such perspective, patients are basically treated as consumers, who appear to have the sole responsibility for their health care. Empowerment is by no means facilitated by the new social role of consumers, which patients are called to enact. Although this phenomenon is not new, Medicine 2.0 has, however, amplified the drive to make patients act as pro-active consumers. By downplaying the role of patients to that of other consumers, Medicine 2.0 conveys an appealing sense of major autonomy and treats patients as the only decision-makers. This not only disempowers patients, but suggests that they may encounter serious risks. In effective empowerment, health decisions are jointly shaped by patients and practitioners who provide care and expert advice, and only this co-responsibility ensures patient safety.

Furthermore, while empowerment requires patients to be well-informed active partners (Funnell & Anderson 2004), the ways in which patients actually inform themselves in the sphere of Medicine 2.0 raises serious concerns. Patients may not be fully aware of the incorrect, misleading or incomplete information which abounds in Medicine 2.0, and of its potential impact on doctor-patient relationships and on their health.

More recently, technological advancements in social networking, participation and collaboration among stakeholders (Eysenbach 2008a) have created «tectonic shifts in the health information economy» (Mandl & Kohane 2008). Among these, this study focuses on the relatively new phenomenon of apomediation, positioned within the broader concept of personalized healthcare. In apomediation, Eysenbach (2008b: 129) claims that «on a decentralized, electronic medium, peers and intelligent systems can give consumers additional information about a topic from other sources and perspectives […]».

2. Apomediated Communication

In the real-world hierarchical structures of healthcare systems, information is traditionally mediated by professionals who address patients as passive recipients. In this mediation approach, physicians act as gatekeepers of medical knowledge and as trusted intermediaries. Under various circumstances, however, patients tend to complain about insufficient doctor-patient communication, thus questioning the credibility of intermediaries (cf. Eyesenbach 2008b; Plastina & Del Vecchio 2014). This has led to «[…] the opposite dismediation approach, in which consumers bypass 'middlemen' completely in order to search information and services on their own» (Weber-Jahnke & Williams 2010: 34). This contrasting approach, amply supported by advanced technologies, has created major concerns about patient empowerment, but has also generated the phenomenon of *apomediation*, which combines *mediation* and *dismediation*. It, in fact, relies on expert sources (mediation), but these are not necessarily a pre-condition for information-seeking (dismediation) (Eysenbach 2008a, b).

More importantly, apomediated communication replaces the traditional intermediary professional, as a gatekeeper of medical information, with the apomediary figure (people, tools) which supports patients as consumers of medical information and services. In other words, rather than standing *in between* the patient and information as an absolutely necessary agent (cf. O'Connor 2009), apomediaries *stand by* health seekers. This social mediated practice is thus not shaped by medical discourse alone, but also through social networking between participants. As O'Connor (2010: 89) points out:

the patient in the apomediated world is empowered to take control of her own healthcare and a degree of the autonomy that was lost in becoming a patient in the intermediated system is regained.

Patients can decide to rely on experiential authorities or credentialed experts who are present in online self-help services. The former are laypeople who offer their experience to support others; the latter are professionals who filter unmediated information to help patients make their decisions, and no longer act as intermediaries. This kind of apomediated communication, however, still replicates conventional human-human interaction. On the other hand, a new practice of apomediation is currently emerging, based on the use of Embodied Conversational Agents, or «[…] autonomous agents with a human-like appearance and communicative skills» (Pelachaud 2005: 683). While these virtual agents are already employed in different social domains to converse with humans (cf. Plastina 2014), they have only recently gained ground in Medicine 2.0 as anthropomorphic interfaces representing animated physicians, who engage in real-time, multimodal dialogue with human patients. This innovative phenomenon deserves deeper research attention to understand how patient empowerment is constructed, or perhaps, deconstructed.

3. The Multimodal Discourse Study

In recent years, advancements in new technologies have witnessed an accelerating shift towards multimodal representations of knowledge and content (cf. Plastina 2013). Although multimodality «is nothing new, nor is it exclusive to the Web» (Garzone 2007: 21), «multimodality is made easy, usual, 'natural', by these technologies» (Kress 2003: 5), which support its fundamental processes of *resemioticisation* and *intersemiosis*. As Iedema (2003: 41) notes, «resemioticisation is about how meaning making shifts from context to context, from practice to practice, or from one stage of a practice to the next». O'Halloran (2011: 126) adds that «[it] takes place within the unfolding multimodal discourse itself (as the discourse shifts between different resources) […]». Intersemiosis, instead, involves understanding the dynamics of meaning-making in multimodal discourse (Lim 2004). The various multimodal ensembles of different semiotic modes (Kress & van Leeuwen 2001) is a matter of choosing how to shape semantic relations for meaningful communication. Jewitt & Oyama (2001: 141) emphasize that «the choice is important, since the decision to represent something in a narrative or conceptual way provides a key to understanding the discourses which mediate their representation».

3.1. Aim and Method

This study aims at exploring the ways in which multimodal discourse is shaped in Medicine 2.0 with particular focus on empowering patients in the apomediated environment of symptom checkers. Informed by Systemic Functional Linguistics, and related studies on intersemiosis (e.g. O'Halloran 2008) and resemioticisation (e.g. Iedema 2001), the study adopts a social semiotic approach to multimodality. Two research questions were addressed: 1. how does resemioticisation operate in apomediated multimodal discourse dealing with symptom checking to empower patients? 2. which intersemiotic relations and metafunctionally based systems are chosen for well-informed apomediated communication?

3.2. Research Tool

The Symptom Checker[1] was used as the research tool to support multimodal discourse analysis. The tool offers patients the experience of engaging in apomediated communication with virtual physicians via web-based symptom checkers for self-diagnosis. In this, the most subtle risks are misdiagnosis and developing unwarranted anxiety caused by the abundance of variably valid information which can turn patients into cyberchondriacs. Furthermore, the fact that most symptoms are not exclusive to one disease may mislead patients in their self-diagnosis. Misinformation may also result from the fact that many conditions are symptom-free (e.g. hepatitis, HIV, mental diseases), and hence, patients delay seeing their doctor.

3.3. Procedure

The two-step analysis considered processes of resemioticisation and intersemiosis in the symptom checker. Resemioticisation was considered at the pretextual level for multimodal indexicality which shapes verbal communication, and for shifts from mediated to apomediated contexts for meaning making. Intersemiosis was analysed for semiotic *status*: equal (complementary) vs. unequal (subordination), and for logico-semantic relations in terms of *expansion* (elaboration, extension and enhancement) and *projection* (locution and idea) (Martinec & Salway 2005: 342). Expansion elaborates on the meaning of one mode by another, extends the meaning of one mode by adding related information through other modes, or enhances a mode by qualifying it through another. Projection referred to verbal and visual modes, which were examined as locution or the projection of wording, and

1. *www.everydayhealth.com/symptom-checker.*

as idea, a projection of meaning, most often by a mental process. Moreover, ideational, interpersonal and textual metafunctional meanings were analysed (cf. Kress & van Leeuwen 2006). The system of transitivity (cf. Halliday & Matthiessen 2004) was used to analyse ideational meaning, based on represented *participants* (identification and attributes), *processes* (actions and their recipients), and *circumstances* (temporal and spatial representations). Interpersonal meaning was considered as interactants' *involvement* and *power position* (cf. Royce 2007), while textual (compositional) meaning was examined as *interactive information linking* relationships and in the *dialogic* process (cf. van Leeuwen 2005).

4. Findings and Discussion

4.1. Resemioticisation in the Apomediated Context

Resemioticisation was found to spring from the construal of indexical meaning so that patients could rely on familiar conventional signs, which "come to 'mean' certain things" (Blommaert 2005:74), even when a shift from intermediation to apomediation occurs. Indexicality was adjusted at the pretextual level, especially through the apomediary's physical appearance, props and semiotic modes of communication. The agent appears on the computer screen as a doctor, indexicalized by non-referential values (e.g. male gender, middle age). Although these subtle forms of indexical meaning do not contribute to the semantico-referential value of the apomediated communicative event, they transmit social meaning, which depends on context variables and their interaction with potential discourse. This was further reinforced through the referential indexicality of props, including the white coat, shirt, tie and stethoscope worn by the doctor. Van Dijk (1998: 220) underlines that, «it may seem strange to include various props as part of a broader discourse analysis, but if the analysis of context is part of such an extended account of text and talk, then it makes sense to take them into account».

Indexical meaning was also shaped by the stethoscope worn around the doctor's neck. Popularly recognised by laypeople as the most representative symbol of the practice of medical consultation, the stethoscope is loaded with non-referential values, including the doctor's status and role. As Markel (2006: 551) points out, «indeed, it embodies the essence of doctoring: using science and technology in concert with the human skill of listening to determine what ails a patient». While this process of resemioticisation appears to simply transfer the same referential meanings and non-referential values of mediated environments to the apomediated one, its broad purpose is to help patients build trust in the apomediary. Actual resemioticisation

was, however, found to occur by displacing direct face-to-face interaction and adjusting it to the logic of medical interviews through the use of audio and visual semiotic modes afforded by the medium even at the pretextual level. As Blommaert (2005: 77) notes, «with pretextuality we find ourselves in the realm of 'invisible' contexts, that influence language long before it is produced in the form of utterances and that define the conditions under which utterances can be produced […]». In this perspective, linguistic indexicality was found to be defined by contextual conditions as indicated in the following examples:

(1) *I am going to ask you questions about symptoms you have now…*
(2) *And like your doctor, I may ask you some questions that seem unrelated…*
(3) *… all of your answers help me here decide what's wrong.*

The examples introduce the conventional question-answer practice of medical interviews and apparently suggest that the virtual physician intends to engage in a co-partner relationship through the indexical words *now* and *here*. However, the indexical expression *And like your doctor* in Example (2) is loaded with referential indexicality (*your doctor*), and with the non-referential value (*and like*) to evoke trust in apomediation. While the expression *all of your answers help* may convey a sense of co-responsibility, it is contrasted by the gatekeeping expression of knowledge *some questions that seem unrelated* and by the object pronoun *me*, which indicate the doctor as the final decision-maker.

This dialogic mediation is, however, in clear contrast with the dismediation of symptom checking. Doctors usually focus on symptoms apart from their manifestation and interpret their general nature (indexical *legisigns*), while patients refer to their own individual manifestations (indexical *sinsigns*) (cf. Staiano 1982). In the apomediated context, indexical legisigns are resemioticised as indexical sinsigns listed in the common symptoms menu in Table 1.

Patients can choose the condition they are experiencing from a restricted menu of 30 symptoms. While this reduces patients' risk of misdiagnosing themselves, resemioticisation carries with it other risks. First, patients are forced to choose only one symptom, although they may be experiencing more than one. Their choice is further based on personal signs of their condition, rather than on medical interpretation of symptomatic signs.

Second, the interview is subsequently conducted on the basis of subjective symptoms. This kind of patient empowerment may easily lead to misdiagnosis as «it is a peculiarity of symptoms that their denotata are generally different for the addresser (i.e., the patient- 'subjective symptoms') than for the addressee (i.e., the physician – 'objective symptoms')» (Sebeok 2001: 47).

Table 1 – Resemioticisation of symptoms: transfer from indexical legisigns to indexical sinsigns

Flu Checkup	Fever
Abdominal Pain	Gas
Arm Pain	Headache
Back Pain	Irregular Periods
Body Aches	Joint Pain
Breast Pain	Leg Pain
Breathing Difficulty	Mouth Lesions
Chest Pain	Nausea
Congestion	Neck Pain
Cough	Rash
Diarrhea	Rectal Bleeding
Ear Pain	Skin Lump
Excessive Sweating	Sore Throat
Faintness	Vaginal Itching
Fatigue	Vomiting

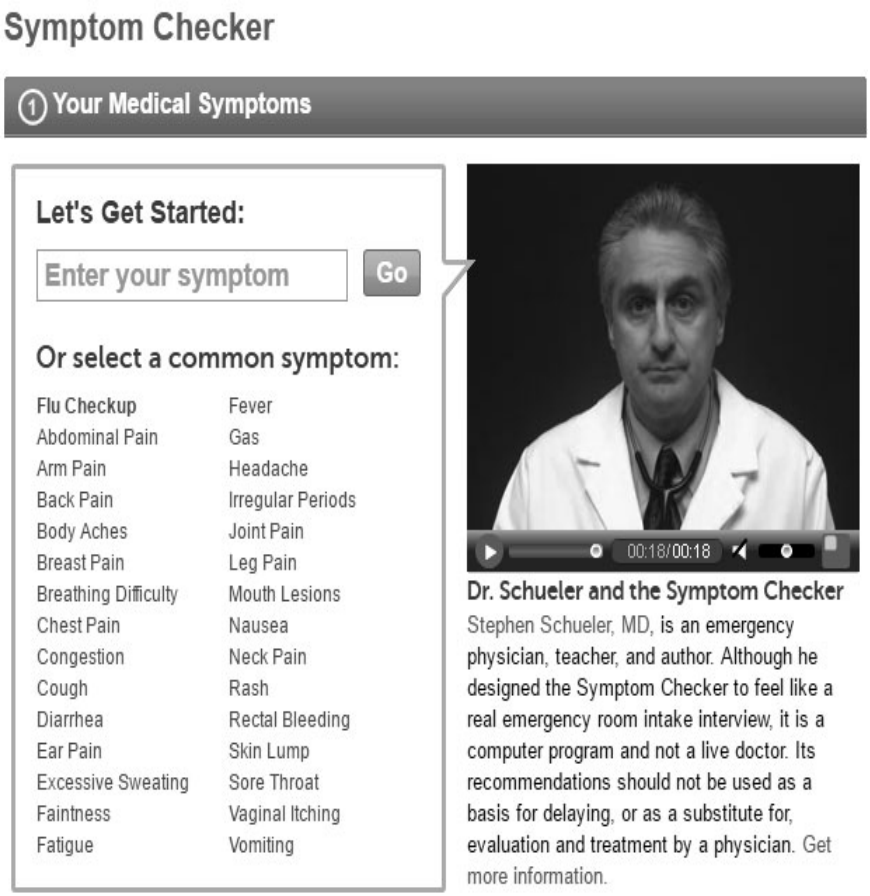
4.2. Intersemiotic Semantic Relations in Apomediation

Intersemiosis was found to occur both in terms of status and logico-semantic relations. The status between visual, written and spoken semiotic modes was unequal with a subordination of all modes to the written one. Logico-semantic relations were established through relations of both expansion and projection. Figure 1 shows how the text beneath the video engages in a semantic relation of extension by adding new descriptive information about the medical practitioner with a twofold purpose. First the medical practitioner is attributed identity and professional status: Stephen Schueler, MD, is an emergency physician, teacher, and author. Second, in compliance with the ethical code of practice, the term *recommendations*, and not diagnoses and treatments, is used as the latter are forbidden online. Thus, the semantic relation of extension builds on the credibility and ethical quality of the depicted informant.

Moreover, projection clarifies the circumstantial meaning of the Symptom Checker through the semantic relation of enhancement (*it is a computer program and not a live doctor*), and the speech bubble creates a semantic relation of locution between the pictured physician and the written list of symptoms. These relations help raise patients' awareness that trust can be placed in the medical advice, which comes from the words of a professional practitioner, although there is no engagement with a real doctor.

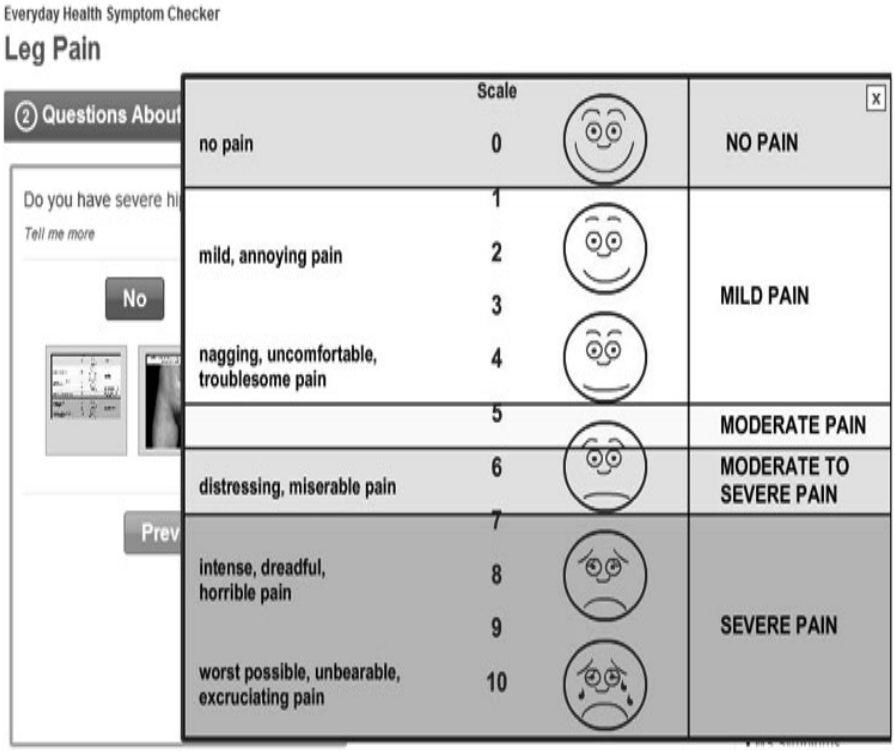
These intersemiotic relations appear to further empower patients in becoming well-informed. As an example, Figure 2 shows how patients can click on the visual icon placed left beneath the dominant written question "Do you have severe hip pain?" The resulting popup determines a shift from the status of subordination of the visual mode to that of an equal complementary status through the representation of a chart. The objective here is to allow patients to learn how to evaluate their level of pain along the measurement scale.

Figure 1 – Intersemiotic status and logico-semantic relations for ethical quality of medical advice



Intersemiotically, the iconic representations of the emoticons gain a complementary status with the written descriptors of pain through the code of Arabic numerals. These offer patients useful information to become active participants in their care by linking "medico-scientific" knowledge to the "science" of patients' conditions. In this, the popup stands in all three relations of expansion with the question "Do you have severe hip pain?". It, in fact, *elaborates* the written mode through the multisemiotic chart, *extends* its meaning by adding related information on pain, and *enhances* the question by qualifying it through the circumstantial relation of reason (pain measurement scale). Moreover, the emoticons stand in a relation of *idea* with the written descriptors as they project mental states of pain which patients need to evaluate accurately. This, however, is not dissimilar to other traditional resources of medical information.

Figure 2 – Shift in semiotic status for patient evaluation of pain

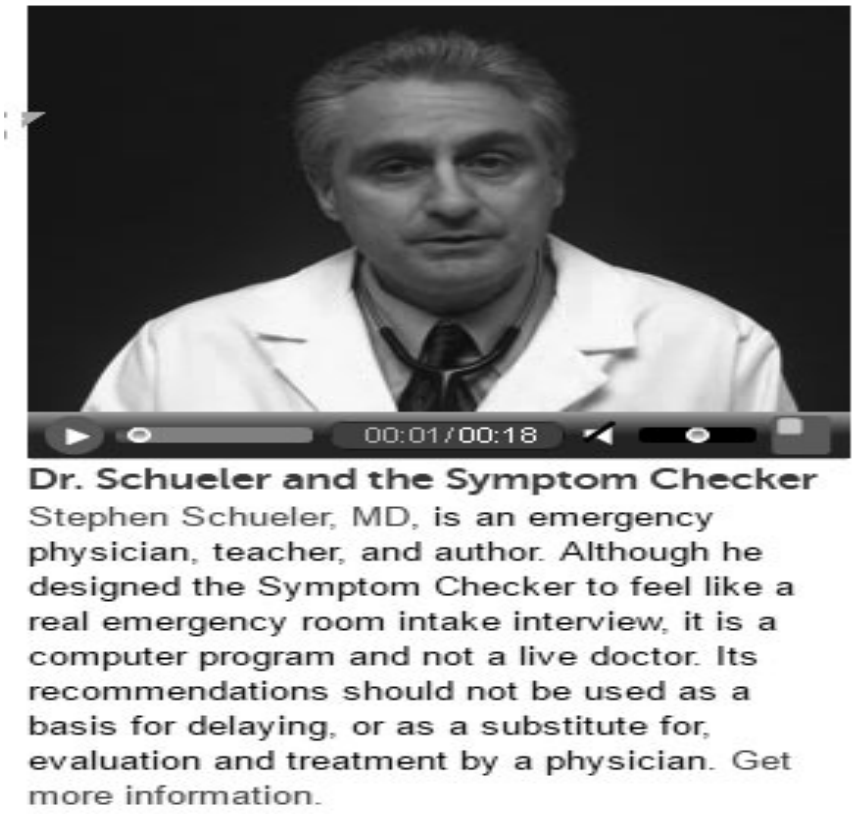


4.3. Metafunctional Meanings in Apomediated Communication

Ideational meaning was first conveyed through the apomediary's visual features (male, middle-aged doctor), which determine an initial ideological control of the communicative event as illustrated in Figure 3.

The apomediary's attributes (white coat and stethoscope) are «[…] indicative of […] hierarchical relations and dominance» (van Dijk 1998: 220), apparently suggesting a doctor-dominant relationship in the social process of the virtual medical encounter. This kind of ideational meaning is, however, countered by patients in different ways. First, patients have experiential knowledge of how their bodies feel, although their expertise is commonly underestimated by intermediaries in real-life medical contexts, where a narrative-based approach to illness in place of the sole biomedical treatment of disease is strongly advocated (cf. Plastina 2016a). Conversely, the apomediary allows patients to put their expertise to full use, and ultimately, becomes the recipient of these decisional actions. The initial ideational meaning is further subverted as patients are technologically enabled to counter the doctor-centred approach in two ways. First, they are

Figure 3 – Ideational meaning in apomediated communication



allowed to decide the duration of real-time interaction, hence establishing when the encounter is over. Second, they can choose to temporarily interrupt the interaction, wishing to move multimodally in diverse spatial directions for the purpose of acquiring more information.

Moreover, co-partner relationship was tentatively built through the techniques of representing the apomediary in a frontal plane, in half-length and at an eye-level angle as in Figure 3. The frontal plane evokes interpersonal meaning of inclusion and the patient's active involvement in the medical world; the half-length representation gives patients the impression of being in the scene, while the apomediary's eye-level angle suggests a sense of equality with patients, rather than any power position (cf. Kress & van Leeuwen 2006).

At the compositional level, *presentational, orientational*, and *organisational* functions of hypermodality (Lemke 2002) were found to create interactive information-linking relations. In particular, presentational meaning was mainly created through multimodal *conjunctive* relations from

Figure 4 – Multimodal Cohesion: Presentational meaning of a reliable environment

Disclaimer

This site offers health, fitness, and nutritional information and is designed for educational purposes only. You should not rely on this information as a substitute for, nor does it replace, professional medical advice, diagnosis, or treatment.

This site does not offer nursing advice, nutritionist counseling, or any professional service requiring licensure, registration, or certification in any jurisdiction. Always consult with your health-care provider before starting any new diet, fitness, or nutritional program. If you have any concerns or questions about your health, you should always consult with a physician or other health-care professional. Do not disregard, avoid, or delay obtaining medical or health-related advice from your health-care professional because of something you may have read on this site. The use of any information provided on this site is solely at your own risk.

Developments in medical research may impact the health, fitness, and nutritional advice that appears here. No assurance can be given that the advice contained in this site will always include the most recent findings or developments with respect to the particular material.

If you are in the United States and think you are having a medical or health emergency, call your health-care professional, or 911, immediately.

the ideational content. As an example, the written suggestion *Get more information* in Figure 3 stands in an interactive information-linking relation with the disclaimer in Figure 4. Here, the physician declares that he is not driven by his own financial interests, but only by educational purposes in the opening line of the text: *this site offers health, fitness, and nutritional information and is designed for educational purposes only.* This claim therefore suggests that the patient is not treated as a pro-active consumer as in other Medicine 2.0 contexts.

The disclaimer further overtly acknowledges practitioners as the effective source of reliability in providing care and expert advice: *you should not rely on this information as a substitute for, nor does it replace, professional*

medical advice, diagnosis, or treatment; always consult with your health-care provider; you should always consult with a physician or other health-care professional; do not disregard, avoid, or delay obtaining medical or health-related advice from your health-care professional because of something you may have read on this site. Hence, the disclaimer also serves the functional purpose of mediating orientational meaning. Placed together, Figures 3 and 4 show how multimodal cohesion operates at the visual-visual, visual-textual and textual-textual levels of meaning for different reasons. The visual-visual relation between the two images is one of a cohesive *additive* relation as the long shot in Figure 4 adds the whole setting of the doctor's real office to the dark background in Figure 3. The visual-textual relation creates a cohesive tie of *repetition* between the textual expression *to feel like a real emergency room in take interview* in Figure 3 and its visual representation in Figure 4. Both cases suggest that the purpose is to increase patients' credibility of a reliable medical environment. The textual-textual relation was found to include a cohesive tie of *synonymy* to build ethical credibility, as indicated in Example 4:

(4) (a) *… It is a computer program and not a live doctor.*
(b) *This site does not offer nursing advice, nutritionist counseling, or any professional service requiring licensure, registration, or certification in any jurisdiction.*

As for orientational meaning, it was shaped through the virtual agent's emulation of human gaze and constant eye contact, which «[…] is the most powerful mode of establishing a communicative link between humans» (Farroni et al. 2002: 9602), and its duration can positively affect patient satisfaction. On the other hand, the organisational structure of the interview was signalled through the numbered headings grouped in Figure 5. These overtly denote how organisational meaning as a cohesive *temporal* relation shaped three coherent stages in the dialogic process, namely, patient request, problem-orientation and diagnosis.

Figure 5 – The organisation structure of the apomediated interview

Detailed multimodal discourse features of the apomediary (A)-patient (B) interview are shown in Table 2.

Table 2 – Multimodal discourse features of the apomediary (A)-patient (B) interview

Stages/Communicative Functions	*Moves*	*Multimodal Expressions/ Semiotic Modes*
1. *Your Medical Symptoms* Giving information	A: Initiating	*Let's get started* (written mode; dialogic inclusion) Eye gaze (inclusion)
Supporting Response	P: Acceptance	Choosing a symptom (written mode)
2. *Questions about Your Symptoms* Demanding Information	P: Initiating	Click on a hyperlinked symptom (hypermodal mode)
Supporting Response	A: Acceptance	*I see you have a fever. Let's get started* (spoken mode) Eyebrow raising (visual mode for concern)
Demanding Information	A: Question	*Have you measured your temperature?* (spoken & written modes; repetition)
Supporting Response	P: Answer	Click on Yes/No buttons (hypermodal mode)
Demanding Information	P: Interruption	Clicking on an icon (hypermodal mode; logico-semantic relation of expansion)
Supporting Response	A: Acceptance	In stand-by mode
3. *Possible Causes & Treatments* Giving Service	A: Initiating	*Your symptoms could be caused by several conditions. Below I have listed the conditions that concern me the most…I recommend that you see a doctor now* (spoken & written modes; repetition) Frowning face (visual mode for concern)
Leave-taking	A: Closing	*Send My Detailed Report* (spoken & written modes; repetition)
Supporting Response	P: Acceptance	Click on the *send my report* button; type in e-mail address (hypermodal mode)
Challenging Response	P: Refusal	Click on the *No Thanks* button (hypermodal mode)

Table 2 shows how structural moves and related communicative functions differ from those of intermediated interviews, as indicated by the multimodal expressions and semiotic modes of communication provided. In each stage of the multimodal dialogic process, patients are allowed to make decisions:

moves of acceptance in stages 1 and 3; interactional interruption in stage 2, whereby the apomediary remains in stand-by mode; refusal to receive a personalised diagnostic report in stage 3. Nevertheless, acceptance merely enables patients to pursue consultation in much the same way as in the Web 1.0 era, or in past offline times. While interruption, instead, can apparently empower patients in becoming well-informed active partners in decision-making about their care, the subsequent options of acceptance/refusal do not lead them to becoming co-decision makers.

5. Conclusions

Patient empowerment is purposed to improving patients' ability in managing their health conditions, negotiating with health professionals and effectively accessing health services. Medicine 2.0 also seems to focus on practitioner-patient relationships, but these participatory processes are commonly driven by commercial purposes. In this scenario, the current multimodal discourse study has shown how the apomediated symptom checker strenuously engages in diverse processes of resemioticisation and intersemiosis to affirm its scientific credibility in order to gain patient trust. These processes, however, have been found to mediate the medical interviews on the questionable basis of subjective symptoms. Advocates (e.g. Eysenbach 2008a, b) claim that apomediation increases patient autonomy, releasing it from «traditional hierarchical sources of information» (O'Connor 2009: 26). Conversely, this study has shown that, even in potentially reliable environments, apomediation subverts mainstream understanding of patient empowerment due to the lack of co-responsibility and co-decision making. Far-reaching consequences can originate from the irresponsible concession of self-diagnosis, which not only disempowers patients, but places their health at risk.

The study has further pointed out two key aspects regarding the choice of intersemiotic relations. First, while these apparently allowed patients to become well-informed, the resources were of no more value than traditional ones. Second, the condition of being well-informed was, however, disempowered due to the absence of co-participation in the final stage of the multimodal dialogic process, where the apomediary acts more as an intermediary, but his treatment decisions do not rely on scientifically objective symptoms.

Currently, «[…] the decision to use apomediaries versus intermediaries remains largely dynamic and situational» (Eysenbach 2008b: 131). This means that patients may eventually decide to discuss their apomediated diagnosis together with their own live physicians, but may also hastily make important health decisions merely based on the outcomes of these tools, rather than undergoing more accurate instrumental tests. As a thorough

understanding and application of empowerment has not yet occurred (Anderson & Funnell 2010), and apomediation is still in its infancy, further research is required to investigate whether this technological practice can make any valuable scientific contribution to patient empowerment in the near future, and inform medical training in the field of pain management (cf. Plastina 2016b).

References

Anderson R. and Funnell M. (2010) "Patient Empowerment: Myths and Misconceptions". *Patient Education Counselling* 79(3), pp. 277-282.

Blommaert J. (2005) *Discourse: A Critical Introduction.* Cambridge, Cambridge University Press.

Bos L., Marsh A., et al. (2008) "Patient 2.0 Empowerment" in Arabnia H.R. and. Marshy A. (Eds.), *Proceedings of the 2008 International Conference on Semantic Web and Web Services,* pp. 164-167.

Eysenbach G. (2008a) "Medicine 2.0: Social Networking, Collaboration, Participation, Apomediation and Openness". *Journal of Medical Internet Research* 10(3): e22, Available at *http://www.jmir.org/2008/3/e22/.*

Eysenbach G. (2008b) "Credibility of Health Information and Digital Media: New Perspectives and Implications for Youth" in Metzger M.J. and Flanagin A.J. (Eds.), *Digital Media, Youth, and Credibility*. Cambridge, MA, the MIT Press, pp. 123-154.

Farroni T., Csibra G., et al. (2002) "Eye Contact Detection in Humans From Birth". *PNAS* 99(14), pp. 9602-9602.

Funnell M. and Anderson R. (2004) "Empowerment and Self-Management of Diabetes". *Clinical Diabetes* 22(3), pp. 123-127.

Garzone G. (2007) "Genres, Multimodality and the World Wide Web: Theoretical Issues" in Garzone G. et al. (Eds.), *Multimodality in Corporate Communication: Web Genres and Discursive Identity*. Milano, FrancoAngeli, pp. 15-30.

Halliday M.A.K. and Matthiessen C. (2004) *An Introduction to Functional Grammar* (3rd Ed.). London, Edward Arnold.

Hughes B., Joshi I. and Wareham J. (2008) "Health 2.0 and Medicine 2.0: Tensions and Controversies in the Field". *Journal of Medical Internet Research* 10(3), e23, Available at *http://www.jmir.org/2008/3/e23/.*

Iedema R. (2001) "Resemioticization". *Semiotica* 137(1/4), pp. 23-39.

Iedema R. (2003) "Multimodality, Resemioticization: Extending the Analysis of Discourse as a Multisemiotic Practice". *Visual Communication* 2(1), pp. 29-57.

Jewitt C. and Oyama R. (2001) "Visual Meaning: a Social Semiotic Approach" in Van Leeuwen T.A. and Jewitt C. (Eds.). *Handbook of Visual Analysis*. London, Sage, pp. 134-156.

Kress G. (2003) *Literacy in the New Media Age*. London, Routledge.

Kress G. and van Leeuwen T. (2001) *Multimodal Discourse: the Modes and Media of Contemporary Communication*. London, Arnold.

Kress G. and van Leeuwen T. (2006) *Reading Images: the Grammar of Visual Design* (2nd Ed.). London, Routledge.

Lemke J.L. (2002) "Travels in Hypermodality". *Visual Communication* 1(3), pp. 299-325.

Lim F.V. (2004) "Developing an Integrative Multisemiotic Model" in O'Halloran K. (Eds.), *Multimodal Discourse Analysis: Systemic Functional Perspectives.* London, Continuum, pp. 220-246.
Lo B. and Parham L. (2010) "The Impact of Web 2.0 on the Doctor-Patient Relationship". *Journal of Law, Medicine and Ethics* 17, pp. 224-228.
Mandl K.D. and Kohane I.S. (2008) "Tectonic Shifts in the Health Information Economy". *The New England Journal of Medicine* 358(16), pp. 1732-1737.
Markel H. (2006) "The Stethoscope and the Art of Listening". *The New England Journal of Medicine* 354(6), pp. 551-553.
Martinec R. and Salway A. (2005) "A System for Image – Text Relations in New (and Old) Media". *Visual Communication* 4(3), pp. 337-371.
O'Connor D. (2009) "Apomediation and the Significance of Online Social Networking". *American Journal of Bioethics* 9(6-7), pp. 25-27.
O'Connor D. (2010) "Apomediation and Ancillary Care: Researchers' Responsibilities in Health-Related Online Communities". *International Journal of Internet Research Ethics* 3, pp. 87-103.
O'Halloran K. (2008) "Systemic Functional-Multimodal Discourse Analysis (SF-MDA): Constructing Ideational Meaning Using Language and Visual Imagery". *Visual Communication* 7(4), pp. 443-475.
O'Halloran K.L. (2011) "Multimodal Discourse Analysis" in Hyland K. and Paltridge B. (Eds.), *The Continuum Companion to Discourse Analysis*. London, Continuum, pp. 120-137.
Pelachaud C. (2005) "Multimodal Expressive Embodied Conversational Agents" in Zhang H. et al. (Eds.), *Multimedia '05. Proceedings of the 13th Annual ACM International Conference on Multimedia.* New York, ACM, pp. 683-689.
Pittler M., Mavergames C., et al. (2011) "Evidence-Based Medicine and Web 2.0: Friend or Foe?" *British Journal of General Practice* 61(585), pp. 302-303.
Plastina A.F. (2012) "Enhancing Consumer Health Vocabulary: the Case of Ontology-Based Searches" in Plastina A.F. *Applied Linguistics and Semantic Web Apps: Cases of Mediated Discursive Practices*. Muenchen, Lincom Europa, pp. 97-122.
Plastina A.F. (2013) "Multimodality in English for Specific Purposes: Reconceptualizing Meaning-making Practices". *Revista de Lenguas Para Fines Específicos* 19, pp. 385-410.
Plastina A.F. (2014) "The L2 Effectiveness of Embodied Conversational Agents as Affinity-seeking Strategies". *Rivista di Psicolinguistica Applicata* 14(1), pp. 83-96.
Plastina A.F. (2016a) "The Discourse of Comforting: The Case of Online Health Support Groups". *Token: A Journal of English Linguistics* 4, *forthcoming*.
Plastina A.F. (2016b) "Putting the Plain into Pain Language in English for Medical Purposes: Learner Inquiry into Patients' Online Descriptive Accounts". *Language Learning in Higher Education*, *Journal of the European Confederation of Language Centres (CercleS)* 6(1), pp. 207-228.
Plastina A.F. and Del Vecchio F. (2014) "Diagnostic News Delivery: A Microanalysis of the Use of Shields" in Zuczkowski A. et al. (Eds.), *Communicating Certainty and Uncertainty in Medical, Supportive and Scientific Contexts.* John Benjamins, pp. 183-200.
Royce T.D. (2007) "Intersemiotic Complementarity: A Framework for Multimodal Discourse Analysis" in Royce T.D. and Bowcher W. (Eds.), *New Directions in the Analysis of Multimodal Discourse*. Mahwah, NJ, Lawrence Erlbaum, pp. 63-109.
Sebeok T.A. (2001) *Signs: An Introduction to Semiotics* (2nd Ed.). Toronto, Toronto University Press.

Staiano K.V. (1982) “Medical Semiotics: Redefining an Ancient Craft”. *Semiotica* 38, pp. 319-346.
van Dijk T.A. (1998) *Ideology. A Multidisciplinary Approach.* London, Sage.
van Leeuwen T. (2005) *Introducing Social Semiotics*. London, Routledge.
Weber-Jahnke J.H. and Williams J. (2010) “The Smart Internet as a Catalyst for Health Care Reform” in Chignell M. et al. (Eds.), *The Smart Internet – Current Research and Future Applications*. Berlin, Springer-Verlag, pp. 27-48.

MULTILINGUAL PERSPECTIVES ON ITALIAN PUBLIC HEALTHCARE WEBSITES*

Kim Grego
Department of Mediation Sciences and Cultural Studies
University of Milano

Alessandra Vicentini
Department of Theoretical and Applied Sciences
University of Insubria – Varese

«The Republic safeguards health as a fundamental right of the individual and as a collective interest, and guarantees free medical care to the indigent».

Abstract

Starting from the 1990s, Italy, like other European countries, has been facing calls for greater local autonomy in its political institutions, including its public healthcare system. This has led to the devolution of healthcare services to each of its twenty administrative regions, which independently set up their own local health structures, or enterprises (It. transl. aziende sanitarie locali*, Asl) and hospitalisation facilities. The entire process got reflected at the formal level in the web-interfaces established by these local structures to reach out to their users/patients, thus sometimes producing non-homogeneous communicative approaches*

This paper analyses all the Italian bi-/multilingual regional healthcare websites. This relevant identity-defining descriptor (bi-/multilingualism) can contribute to gaining insight into the way public healthcare institutions tackle the quite recent waves of immigrants from Eastern European, Far Eastern, North African and Arab countries to Italy.

Results highlight the presence of few multilingual documents, especially in English. Most of these are linguistically accessible at a basic level, but show significant ambiguities that can often prevent full or partial comprehension. There are mostly translations rather than original texts, which proves to be a frequent but debatable feature of Italian Asl communication.

1. Background: multilingualism and public healthcare

A close link exists between a country's identity, its language and its local governments – the last two expressing and being expressions of the first and, more than often, the grounds on which battles in its name – both real and

* Research for this paper was conducted jointly by the two authors. In particular, Kim Grego is responsible for § 1.2, 3.1.C, 4; while Alessandra Vicentini for § 1, 1.1, 2, 3.1A, 3.1B, 3.1D. Part of the research background on institutional web communication was funded through a 2014-2015 US-Italy Fulbright Commission Research Scholar Grant (grantee: K. Grego).

symbolic – are fought. Public healthcare, constantly fought over by the central and local governments, is deemed a relevant institutional setting against which to explore the complex relationship between language and identity.

This investigation will consider the case of Italy, where – mostly unbeknownst to the general public – 1 official language and 5 co-official languages are spoken in various proportions across 20 administrative *regioni*, 110 *province* and 8,092 municipalities. With all of its regions being fairly autonomous and some petitioning for further devolution, Italy is one clear example of controversy over national identity expressed both in its language and in its administration.

1.1. Italy's languages

A brief outline of the country's current linguistic, administrative and public healthcare situation shall serve to illustrate this investigation's background.

Though it may not be common knowledge among non-Italians and Italians alike, along with the nation's official language – Italian – and the hundreds of its diatopic varieties (dialects) not enjoying language status (Berruto 1987: 27), French is co-official in the Valle d'Aosta region; German and Ladin in Trentino Alto Adige; German, Slovenian and Furlan in Friuli Venezia Giulia; and Sardinian in Sardinia[1]. In these regions, the co-official languages are both spoken by the population in varying percentages and used in official institutional settings, much as it happens, for instance, with the English/Welsh pair in Wales or the English/Irish one in Éire. Noticeably, all the Italian bi- or multilingual regions partly share borders with other countries, or are islands (Sardinia)[2]. This condition shall be referred to as 'historical (official) multilingualism', limited to specific regions.

The relatively new socio-political phenomenon of immigration also contributes to Italy's fragmented linguistic situation. Following the recent arrival into the country of large groups of immigrants, these languages are now also spoken throughout Italy, giving rise to what will hereinafter be termed 'recent immigration multilingualism':

Table 1 – Recent immigration languages spoken in Italy

Romanian	21.19%
Arabic	13.10%
Albanese	10.50%
Spanish	07.00%
Chinese	04.40%

1 According to Sardinia's Regional Law no. 26/1997 and Regional Council Resolution no. 16/14 of 18 March 2006.

2. Although a movement to promote the local language of Sicily – Italy's other island-region – exists, this has not been granted co-official status yet.

To complete the overview of Italy's current linguistic situation, reference must be made to the so-called 'international communication languages', i.e. those languages not natively spoken in the country that are however used for international exchanges, especially in writing. This is not, of course, only an Italian trend but a global one and, as far as Italy is concerned, these languages obviously include Lingua Franca English (LFE; see Seidlhofer 2004) and the other European Union (EU) working languages, French and German. Although in Italy their usage represents a minor phenomenon, it proves particularly relevant when dealing with institutional communication, which often takes into consideration exogenous influences of a political nature, e.g. EU policies, in spite of opposite local trends. For the sake of this study, this situation shall be defined 'EU multilingualism'[3].

Table 2 sums up the current linguistic situation as outlined above.

Table 2 – Italy's linguistic situation as described in § 1.1

Type of Multilingualism	*Language(s)*	*Diatopic distribution*	*Diamesic variation*
Historical/Official	French	Local – Valle d'Aosta	Mostly spoken
	German, Ladin	Local – Trentino Alto Adige	Mostly spoken
	German, Slovenian, Furlan	Local – Friuli Venezia Giulia	Mostly spoken
	Sardinian	Local – Sardinia	Mostly spoken
Recent immigration	Romanian, Arabic, Albanian, Spanish, Chinese, Russian	National, variable %	Mostly spoken
EU	English + French + German	National, variable %	Mostly written

1.2. The Italian public healthcare system

Health was established as a «fundamental right of the individual and a collective interest» by the 1948 Italian Constitution (Art. 32), long before any other European country included it in any of their Charters. Italy, furthermore, «guarantees free medical care to the indigent» (*ibid.*), ranking 13th out of the 28 European Member Countries for GDP spent on this item in 2012 (European Commission 2014).

Since the founding of the Republic in 1946, Italy's public healthcare has undergone various transformations following subsequent reforms. Started out

3. For a thorough analysis of Italy, multilingualism and immigration, see Garzone/ Catenaccio (2014).

as a local service managed by local municipalities, in 1978 it underwent a re-modelling in both name and structure, based on the original British National Health Service (NHS), and acquiring the present name *Servizio sanitario nazionale* (Ssn). Just like the NHS, the Ssn was meant to be a totally publicly funded service, but over the years it has had to introduce charges to users. Today, it is 97.3% publicly funded by direct and non-direct taxation, and 2.7% self-funded by own proceeds and incomes also deriving from user co-payments (Ministero della Salute 2016).

The current structure of the Italian healthcare system comprises a number of national, regional and local entities, starting from the Ministry of Health down to the smallest local public surgery[4]. Public healthcare is administered to users via two types of entities, the only ones they will usually need to deal with under normal circumstances: *Aziende sanitarie locali* (Asl) (literally: Local Health Enterprises), sometimes also called *Aziende servizi sanitari* (Ass), or Healthcare District Units (HDUs), and *Strutture di ricovero* (Sr) (literally: Hospitalisation Facilities), or Hospital Administrations (HAs)[5]. Asl are entities that, on behalf of a region, manage and administer healthcare to residents of a given territory within a given region through selected public or private providers. They are randomly scattered on the territory, not necessarily following the administrative structure: there are 110 provinces in Italy but 139 Asl (Ministero della Salute 2015), which thing sometimes creates administrative doubts in Italians and foreigners alike as to which Asl they pertain to. Sr are regional or interregional autonomous hospitals providing healthcare services to residents; some Sr are not autonomous, but depend on a given Asl, so they are technically part of their mother Asl. The term 'enterprise', introduced with a series of reforms passed during the 1990s, places the emphasis on the independent, business-like and profit-oriented nature these entities were supposed to acquire, as opposed to the State-dependent, high-loss, fragmented way they had been managed thus far – much like the introduction of the concept of 'trust' in the NHS in those same years.

2. Aims, corpus and methods

The devolution of the Italian healthcare is reflected in the websites of each individual Asl and Sr, which each healthcare structure employs differently, applying diverse linguistic strategies to communicate with its users.

4. For more information about the Ssn, see Centro di ricerca sulle amministrazioni pubbliche "V. Bachelet" (2008).

5. The English 'enterprise' is thought to translate the Italian noun *azienda* in the phrase *Azienda Sanitaria Locale* better than the generally received "unit" or "agency", since it underlines the recent marketing-oriented and managerial approach devised by local health organisations in Italy. This also applies to the previous denomination of Sr, that is *Azienda Ospedaliera* (Hospital Enterprise).

This paper intends to analyse all regional healthcare websites from the perspective of a particularly relevant identity-defining descriptor, that is to say bi-/multilingualism. This is an element that can contribute to (a) describing how healthcare is delivered in regions that are historically and officially bi-/multilingual; (b) gaining insight on the way public healthcare institutions tackle the recent waves of immigrants from Eastern European, Far Eastern, North African and Arab countries to Italy; (c) uncovering whether the languages of international communication (i.e. EU working languages) are used.

The starting point for website selection was the site of the Ministry of Health (http://www.salute.gov.it), which includes the list of Italy's 139 Asl (2015). This study, in particular, analysed a sample of 17 Asl, namely those belonging to the regions featuring historical bi-/multilingualism: Valle d'Aosta (1), Friuli Venezia Giulia (5), Trentino-Alto Adige (3) and Sardinia (8). These were first scrutinised manually to identify the specific bi-/multilingual information. They were then analysed qualitatively to assess the linguistic effectiveness of such web-mediated communication. The results were interpreted from a Critical Discourse Analysis perspective (Fairclough 1993, 1995, 2003, 2006; Fairclough *et al*. 2007) as well as using tools from multimodality (Kress / van Leeuwen 1990/2006, 2001; Garzone *et al*. 2007, Grego / Vicentini 2011). Some additional insights were gained from sociolinguistic studies (Berruto 1987; Meyerhoff 2006).

3. Analysis

3.1. Historical multilingualism

The four traditionally bi-/multilingual regions' Asl websites deploy diverse communication strategies when minority languages are at issue and foreign citizens are envisaged.

A. Valle d'Aosta

The Valle d'Aosta Asl website features a bilingual logo (i.e. the Italian *Valle d'Aosta* and the French *Vallée d'Aoste*). However, no other bilingual (Italian-French) information is reported. Attention is drawn to foreign citizens, who are provided with a dedicated channel (*S.I.S.I. – Sportello Informativo per la Salute degli Immigrati*) that includes a guide for foreigners (*Guida per gli stranieri*), which is only in Italian though[6].

6. Monitoring of the website over the last 6 years allowed for highlighting changes in the languages provided to cater for foreigners. The previous version of the site, in fact, featured six links to as many healthcare guides versions, comprising two EU languages (i.e. English and French), three recent immigrants' languages (i.e. Arabic, Chinese and Russian)

B. Sardinia

Notwithstanding the prominence the Sardinian language and culture are given on the Sardinia Autonomous Region website (Fig. 2), nowhere in the health channel can Sardinian be found. The same consideration applies to all the websites of the 8 Sardinian Asl. Significantly, specific information especially dedicated to foreigners or translated into foreign languages is not present either in any of the 8 websites, which feature the same layout and design and were thus probably created – and are updated and managed – centrally.

Fig. 1 – Regione autonoma della Sardegna's website. Home > Argomenti > Cultura e istruzione > Lingua e cultura sarda, http://www.regione.sardegna.it/argomenti/cultura/lingua_cultura.html (last visited on 1 September 2015)

C. Friuli Venezia Giulia

The Friuli Venezia Giulia regional website represents an interesting case because of its linguistic hybridization. Indeed, besides the Italian version, four more foreign language versions (i.e. English, Furlan, Slovenian and German) are present. This testifies to the region's historical background and geographical position. Noticeably, not only does the site include Slovenian and German, two languages spoken just beyond the regions' borders, but also Furlan, a minority language spoken in some very limited areas, which was granted official recognition as one of the regional community's languages. For each of these languages a dedicated website including fewer pages than its Italian counterpart is present.

and, interestingly enough, an Italian version. Titles and links were in Italian, but all the PDF brochures were seemingly (a thorough evaluation would have been needed to assess the translations) professionally translated.

Fig. 2 – Friuli Venezia Giulia autonomous region, http://www.regione.fvg.it (last visited on 1 September 2015)

The Friuli Venezia Giulia Ass (*Azienda per i servizi sanitari*) websites offer interesting material for reflection. From October 2009 to November 2013, when they were last monitored for this project, the territory's linguistic fragmentation was apparent. Three out of six websites featured the Italian version only, while the others included different language versions according to the language(s) spoken in each specific area. In particular, the Triestina, Isontina and Friuli occidentale Ass only had an Italian version; Alto Friuli had Furlan, Slovenian, English and German; Medio Friuli had Furlan and Slovenian; Bassa Friulana had a Furlan version that was constantly being built and updated. The latest consultation (1 September 2015) shows how the Ass – and hence their websites – were reduced and split into smaller groups (from six to five) and the presence of foreign languages significantly decreased, with four out of five websites (Triestina, Bassa Friulana-Isontina, Friuli Centrale and Friuli occidentale) having only an Italian version and no sections in foreign languages. The EU official languages, once represented by the partial English and German versions of the Alto Friuli website (Slovenian, which featured in the Alto Friuli website, is not a EU working language), have currently been reduced to a German version only of the Alto Friuli-Collinare-Medio Friuli website. The only remaining linguistic alternative is the Furlan version provided, again, by the Alto Friuli-Collinare-Medio Friuli website – which was the one that had always had the widest linguistic offer anyway – and it is an Italian minority language. Alto (Northern) Friuli-Collinare-Medio Friuli is an area which borders with Austria and Slovenia, thus the presence of German and Slovenian was perfectly understandable. A historical habit to multilingualism was probably behind the adoption of English as a lingua franca, ideally catering for all the other foreign users. The fact that only German and Furlan remain may be explained in terms of

a process of constant if not increased attention to local language minorities that the entire Friuli Venezia Giulia Ass has been undergoing in the last years. This was mentioned in the Alto Friuli Ass's corporate communication plan for 2014, and has not been fully applied as yet:

> L'Azienda Sanitaria si impegna nel territorio dell'Alto Friuli anche riguardo alla tutela delle lingue minoritarie ai sensi della legge n. 482 del 15.12.1999, «Norme in materia di minoranze linguistiche storiche», essendo il territorio caratterizzato dalla presenza di tre lingue soggette a tutela quali il friulano, lo sloveno e il tedesco. Nel 2014 si proseguirà con le attività di utilizzo delle lingue ammesse a tutela (friulano, tedesco, sloveno) nella comunicazione sociale dell'ASS3. Le attività previste sono lo sviluppo del sito aziendale plurilingue, la creazione e diffusione di opuscoli informativi plurilingui, la prosecuzione delle attività plurilingue ormai consolidate (ASL 3 Alto Friuli 2014: 20).

As regards the recent immigration languages, there are no partial or complete versions of the Friuli Venezia Giulia Ass websites, as seen, with the Bassa Friulana-Isontina Ass's section called «Information in foreign languages» (Fig. 3) being the only source providing Russian and Romanian material (as well as English, French, German, Slovenian and Furlan).

Fig. 3 – Friuli Venezia Giulia Ass 2 Bassa Friulana-Isontina http://www.ass5.sanita.fvg.it/it/servizi_al_cittadino/foreing_people/index.html (last visited on 1 September 2015)

Generally speaking, the presence of foreign language material in the five Friuli Venezia Giulia Ass websites can be defined as 'rare', and it is associated with random documents, in the form of PDF leaflets and

brochures about topics of interest for foreigners/immigrants. In 2013, the Triestina Ass hosted a leaflet on the 'Privacy protection Act and Medical data processing' in 7 languages: Albanian, French, English, Italian, Romanian, Serbian and Slovenian. In the same year, the Alto Friuli Ass featured downloadable lists of services available to citizens in 10 languages, apart from Italian: English, Albanian, Arabic, French, Chinese, Polish, Romanian, Russian, Serbo-Croatian and Spanish. It was a large offer and it should be thoroughly compared to the data on immigration in the area. A quick survey based on official statistics (Friuli Venezia Giulia 2012), for instance, reports the nationalities of the 15 largest groups of immigrants in the region, among which there are no Spanish-speakers: how was the presence of the Spanish leaflet justified, then? Was there any consideration for illegal immigrants, for example? The other nationalities, however, were all represented. Both these PDF documents were no longer present in 2015, making the quantity of foreign language material even scarcer which, again, could be explained by a shift of focus from immigration and EU languages to minority ones. Not only, the Alto Friuli-Collinare-Medio Friuli Ass website now contains links to nine brochures in nine different languages on the Ministry of Health website about how to «access the national health service by non-EU nationals» (Ministero della Salute 2014). These are in Albanian, Arabic, Chinese, French, English, Italian, Romanian, Spanish and Ukrainian. It is a large, centralised offer that aims at informing all foreigners coming from without the EU about the basic facilities offered by the Italian national health service, such as the health insurance card, GPs availability, etc. The brochures have been designed and funded by the Ministry of Health in collaboration with eight other regions. They are thus intended to cater for different ethnic groups present in eight different regions. Friuli Venezia Giulia region features among them. Another link directs users to another external resource, a brochure titled «Health: everyone's right. Healthcare in Italy» (Ministero della Salute 2015). This is a bilingual Italian-foreign language(s) brochure that is given in the same nine different languages. It includes information on the Italian healthcare service facilities and it is directed at both EU and non-EU nationals. Such change of providing external, centralised links to the Ministry of Health website could be explained in terms of an attempt to homogenise foreign language material (both in the EU and in the recent immigration languages) on the general facilities offered to EU and non-EU citizens by our national health system. A rather more rational selection of languages is that of the Bassa Friulana-Isontina Ass for its 'Summer tourist services' PDF leaflet, available in Italian, English, French and German, a document that has been present on the website since at least 2013. The Bassa Friulana-Isontina area has numerous sea resorts very popular with both Italian and foreign tourists: English, French and German cater for traditional tourism

Table 3 – English-only material in Friuli Venezia Giulia Ass's websites as of 1 September 2015

	Document	*Text type*	*Size (pag.)*	*Purpose*	*Target audience*
1	*Data protection consent form* (Ass 2)	PDF form	1	Collect patient's consent to personal data processing	All foreigner residents
2	*Medicina Trasfusionale Latisana 2014 English* (Ass 2)	PDF leaflet	2	Inform about the department of transfusion medicine	All foreigner residents
3	*Medicina Trasfusionale Palmanova 2015 English* (Ass 2)	PDF leaflet	2	Inform about the department of transfusion medicine	All foreigner residents
4	*Summer medical service Inglese 2015* (Ass 5)	PDF leaflet	2	Inform tourists about emergency and medical assistance available	Foreign tourists
5	*Capire capirsi* (Ass 5) (Italian, English, Romanian, Russian multilingual document)	PDF brochure	53	Inform on how to provide assistance to elderly and disabled people	Foreign caregivers
6	*Pronto soccorso italiano-inglese* (Ass 5) (Italian-English bilingual document)	PDF leaflet	2	Inform on ER procedures	All foreign residents
7	*Opuscolo viaggiatore inglese* (Ass 5)	PDF leaflet	2	Instruct travellers on how to behave when abroad	All residents
8	*Vademecum* (Ass 5) (Italian, English, Romanian, Russian multilingual document)	PDF brochure	64	Inform on how to provide assistance to elderly and disabled people	Foreign caregivers

from 'well-off' Northern-European countries. 'New' tourism (e.g. from China) is not considered, though, and – again – it would be interesting to further investigate data on the nationalities of tourists coming to the area in recent years. A look at regional statistics shows that tourists from Austria

and Germany are indeed the most numerous in the coastal area, but the French only rank eighth, whereas no UK tourists feature among the data available, though US and Canadian tourists represent the largest group of extra-European tourists (Regione Autonoma Friuli Venezia Giulia 2015). The choice of languages thus seems justified, though it overlooks tourists of many other nationalities, who supposedly must manage with the information in one of the three foreign languages offered.

Focusing on the English language material, this is currently scarce. A manual quantity search retrieved documents mostly hosted by only two Ass (Ass 2 Bassa Friulana-Isontina and Ass 5 Friuli Occidentale), in the form of PDF leaflets and brochures. The latest survey reveals the following English-only material.

Document 1 is a consent form to process a patient's personal and clinical data. Documents 2 and 3 provide information on transfusion services, and are precisely the same, except for the contact information. Document 4 informs summer visitors to the Lignano Sabbiadoro sea resort about the emergency and regular medical assistance available in the town. Document 5 is a multilingual brochure in Italian, English, Rumanian and Russian to help caregivers in providing home assistance to elderly, disabled or ill people. Document 6 reports and explains ER procedures in Italian and in English. Document 7 deals with the behaviours to follow and vaccinations to receive when travelling to countries at risk of malaria and other infectious diseases. Document 8 is the same as number 5, but it contains new information as well as almost all the text from document 5 listed as an appendix.

A qualitative linguistic analysis of the documents retrieved revealed a number of common features. To begin with, all the English texts are translations of original Italian documents. In the case of documents 5, 6 and 8, this is apparent in that they are bi- or multilingual texts, designed to graphically accommodate various versions (see last column of Table 3). In all the other cases, the corresponding original Italian documents could easily be retrieved in the same sections where the English or multilingual versions were found, or by performing a simple search on the website's search engine. The translated nature of the English texts significantly affects their language at all levels, resulting in the presence of numerous calques. Lexically, problematic words have been categorised into misspellings, ambiguous (not perfectly clear, though the meaning can be inferred through semantic connections) choices, unsuitable choices of words (non-specialised language), unsuitable choices of words (specialised language). Examples can be seen in Table 4.

Syntactically, a number of issues emerged, the majority of which can be classified into the following categories: word/clause order or absence, and use of verb tenses, prepositions, determiners (Table 5).

Table 4 – English-only material in Friuli Venezia Giulia Ass's websites. Lexical issues

Doc. no.	*Misspellings/ misplaced words*	*Ambiguous (may be inferred) words*	*Unsuitable (non-specialised) words*	*Unsuitable (specialised) words*
1	Expression of **concent** to the **processiing** (consent; processing)	unless my **revoke** or change (En.: vtr; It.: *revoca*, n)	I can decide to **obscure**, in every moment, a single health and treatment data (have removed or deleted)	health **folder** (clinical, medical record)
2	**Headquarte** (Headquarters)	Welfare department of Transfusion medicine **Wide** area of Udine (It.: *area vasta*, legal-administrative term, similar to 'greater' as in Greater London)	you can use the report forms present in the **appropriate** boxes (suitable, relevant)	The whole blood donation can be repeated not before **expiry** period of 90 days (–)
3	See doc. 2 (the two documents are the same, except for the contact information)			
4	General **Praticitoners** and Pediatrician at free **choise** (practitioners, choice)	**Unique** head office in Lignano Sabbiadoro (Only office)	The services provided are **on charge** (a fee is charged)	Mod. 111 for Croatia, **released from** a sanitary District (issued by)
5	in order to **improveme** the life quality (improve)	Who cares the person during the daytime (in **wearing**, washing, getting shoes on, walking) (dressing)	Have meals at fixed hours and **share** foods into 3 main meals (divide, provide)	This type of ulcers very often forms when the skin is compressed between bones and a stiff **plane**, such as a bed or a wheel-chair (surface)
6	But a relative **attend** the medical inspection when **may** small children or individuals being not able to express their trouble are examined (may attend)	Access will **occur** as soon as possible (be granted)	Relatives' assistance is not necessary in this phase, **missing** specific indications (unless otherwise specified)	The physician **states** the patient's needs (assesses)
7	Always be sure to **practise** safe sex (practice)	Malaria is transmitted by the **puncture** of an insect (bite)	malaria is **manifested** mainly from sundown to sunset (contracted, spread)	International traveller **ambulatory** (clinic, surgery, practice)
8	The first job I found was to take care of an elder woman with **Altzheimer** (Alzheimer)	At the same time a minimal **affective** content was preserved (emotional)	Take the **coffee machine** that is on the cabinet and make the coffee for us, please (moka pot)	to be filled in by the **familiar** nurse (family nurse, caregiver, carer, etc.)

Table 5 – English-only material in Friuli Venezia Giulia Ass's websites. Syntactic issues

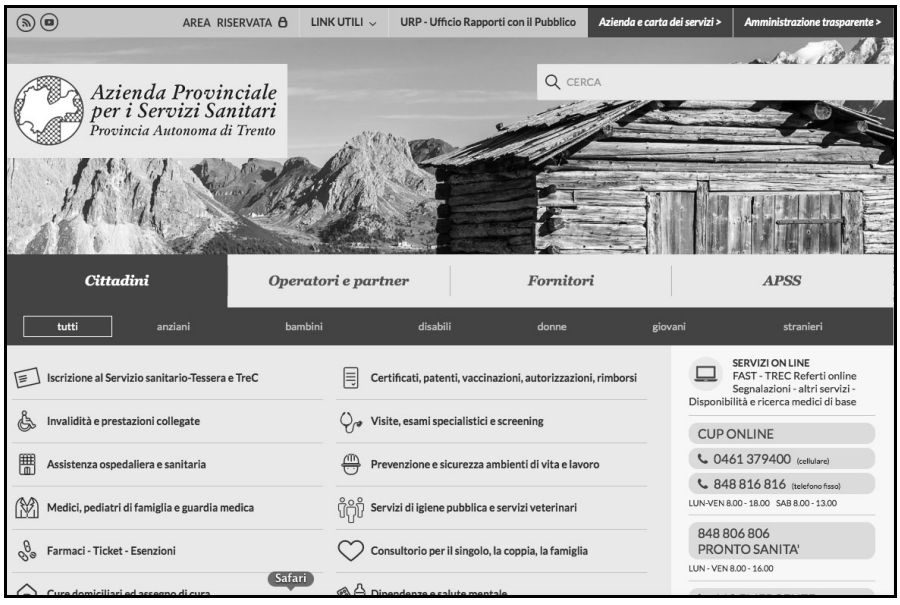
Doc. no.	*Word/clause order/absence*	*Verb tenses*	*Prepositions*	*Determiners*
1	the **consent**, already given, can be modify or deny, in every moment, the whole **consent** or a part of it	the processing **is involving** in particular «the personal and sensitive data»	I agree that the clinical data, including **to** the collection of pictures or videos	The present consent of treatment of my Data has **a** permanently validity
2	At the Hospital **is the active service** of Transfusion Medicine	Donors **are welcomed**	appointment by phone, calling **at** tel. number 0434	Pregnancy represents an element of **a** temporary unfitness
3	See doc. 2 (the two documents are the same, except for the contact information)			
4	In the First Aid Area **is available** an Interpreter Service during day time.		All services provided by duty doctors for tourists are charged **with** a fee	An operator will make you **few** essential questions
5	Will approach the body of the cared person to herself, when shifting a person lying in bed	the patient **will be felt** understood	When carrying weights, keep them **close your body**	**A** correct cleanliness will be carried out in a suitable environment
6	from 01st to 07th **September will** be operational only during day-time	The First Aid ticket is different […] because it **will be paid** even by individuals enjoying exemption	**At** this purpose, it would be better not to go to the First Aid station	**Any** individual is received according to some coded standards of seriousness
7	bring **with you** a mosquito net	If you **will** be sleeping in a tent	Vaccination against typhus is advised **to** those who visit countries	Never buy food when you are not sure of **their** nature
8	Taking **into account** these elements	Olga: Right. There **aren't** any lemons for several days	like it so much because it reminds **me my** youth and makes me cheer	Olga: Now, after **the** breakfast, we'll take the medicine

The analysis confirms the heavy influence that their being translations has on the Ass's English texts. The lexico-syntactic levels alone (not considering other aspects such as the stylistic and the cultural ones) show that the words used for communication can be incorrect in their spelling or position within the sentence (Table 4 column A), suggestive of the correct meaning but not undoubtedly clear (Table 4 column B), definitely incomprehensible as generic (Table 4, column C) or specialised (Table 4 column D) terms. Not only, entire phrases and clauses are at times misplaced (Table 5 column A), inappropriate verb tenses are employed (Table 5 column B), prepositions can be missing or used wrongly (Table 5, column C), and the whole range of determiners suffer from general misuse.

D. Trentino-Alto Adige/Südtirol

The healthcare of the autonomous region of Trentino Alto Adige/Südtirol is managed by its two Autonomous Provinces of Trento and Bolzano through two separate Asl. The Italian-speaking Trento Asl offers an Italian-only website, not even including a German version, though German is the main official language of the bordering province (Fig. 4). Sparse information in other languages is provided. For example, downloadable consent forms to employ the services of language mediators are present in 19 languages, besides Italian: Bangla, Portuguese, Greek, Chinese, Macedonian, Hindi, Urdu, Spanish, Punjabi, French, Romanian, Russian, Serbo-Croatian, Arabic, English, Polish, German, Turkish, Albanian[7]. It is the widest choice of foreign languages encountered in the websites considered, definitely taking into consideration many recent immigrants, as well as including several European languages and the three EU working languages. The autonomous Province of Bolzano Asl website offers a German version. No other information directed at foreigners/tourists in other languages is present.

Fig. 4 – Azienda Provinciale per i Servizi Sanitari, Provincia Autonoma di Trento, http://www.apss.tn.it (last visited on 25 September 2015)



7. Provincia Autonoma di Trento, Azienda Provinciale per i Servizi Sanitari > Stranieri > Consultorio e Mediazione culturale > Mediazione culturale, available at *https://www.apss.tn.it/it/documenti-servizio-comunicazione*, last visited on 1 September 2015.

The Alto Adige/Südtirol Asl, representing the German-speaking province, has created a perfectly bilingual (Italian-German) website (Fig. 5). All the information provided is given in both languages, and both versions have an identical structure and layout. If perfect bilingualism is often considered impossible, this website at least *looks* perfectly bilingual. The long history of territorial and linguistic divides – now turned into coexistence – is clearly reflected in this choice. No versions in any other languages are provided, though it is interesting to notice that, only in the logo, there appears a third language: Ladin, a minority language that enjoys an official status in some Alto Adige municipalities. The 'perfect bilingualism' of this website, however, is limited to the two main languages, German and Italian. No documents in any EU or recent immigration languages are present on the website, which shows great attention to the internal linguistic divide but no interest for the outside world, in spite of, for instance, the great number of international tourists that the mountain resorts of the province attract yearly[8]. It is true that Alto Adige has created and manages several tourist web portals and sites dedicated exclusively to tourists – e.g. the Pusteria Valley has its own official tourist website, with an English version and information on medical emergencies[9] – but the data provided are scarce and certainly do not explain how the healthcare service and facilities work in the area.

Fig. 5 – Azienda Sanitaria dell'Alto Adige, http://www.asdaa.it (last visited on 25 September 2015)

8. See, for instance, the province's official statistics for 2015: *Istituto Provinciale di Statistica – ASTAT, Turismo*, available at *http://www.provincia.bz.it/astat/it/mobilita-turismo/turismo.asp.*

9. Pustertal.org > Service > Important phone numbers, available at *http://www.pustertal.org/en/service/important-phone-numbers/.*

Table 6 – English texts in Alto Adige Asl, Autonomous Province of Trento APSS and Autonomous Province of Bolzano Asl websites

Doc no.	*Document*	*Genre*	*Size (pag.)*	*Purpose*	*Target audience*
1	*Anamnesi (inglese)* (Asl Alto Adige)	PDF form	2	Collect data from patients	All foreign residents
2	*Seminal fluid collection procedure* (APSS Trento)	Word brochure	1	Instruct about medical procedure	All foreign residents
3	*Procedure for the collection of a 24-hour urine specimen* (APSS Trento)	Word brochure	1	Instruct about medical procedure	All foreign residents
4	*Collecting a urine sample for urine culture* (APSS Trento)	Word brochure	1	Instruct about medical procedure	All foreign residents
5	*Collecting a urine sample for schistosoma spp. detection* (APSS Trento)	Word brochure	1	Instruct about medical procedure	All foreign residents
6	*Collecting a sputum sample to determine the presence of mycobacterium* (APSS Trento)	Word brochure	1	Instruct about medical procedure	All foreign residents
7	*Collecting a stool sample to detect intestinal parasites* (APSS Trento)	Word brochure	1	Instruct about a medical procedure	All foreign residents
8	*Detection of oxyuriasis eggs – Enterobius vermicularis – (Scotch tape test)* (APSS Trento)	Word brochure	1	Instruct about a medical procedure	All foreign residents
9	*Collecting a urine sample from an infant for urine culture* (APSS Trento)	Word brochure	1	Instruct about a medical procedure	All foreign residents
10	*Collecting a sputum sample for a culture test* (APSS Trento)	Word brochure	1	Instruct about a medical procedure	All foreign residents
11	*Modalità di raccolta del campione di escreato per esame colturale* (APSS Trento)	Word brochure	1	Instruct about a medical procedure	All foreign residents

Table 6 – Continued

Doc no.	*Document*	*Genre*	*Size (pag.)*	*Purpose*	*Target audience*
12	*Istruzioni di prelievo/Collecting instructions* (APSS Trento)	Word brochure	1	Instruct about a medical procedure	All foreign residents
13	*Collecting a urine sample to identify mycobacterium (BK)* (APSS Trento)	Word brochure	1	Instruct about a medical procedure	All foreign residents
14	*Agreement to the intervention of the cultural mediator/ Consenso all'intervento del mediatore culturale* (APSS Trento)	PD form	1	Collect patient's consent	All foreign residents
15	*Anaesthesiological assessment and informed consent form for patients undergoing surgery* (APSS Trento)	Word form	1	Collect data from patient/collect patient's consent to operation	All foreign residents
16	*Child Health Record Booklet* (APSS Trento)	PDF brochure	1	Inform about completion of personal child health record	All foreign residents with children
17	*Privacy Policy* (APSS Trento)	PDF brochure	2	Inform on data processing methods	All foreign residents
18	*Request for information on economic and logistic aspects of planned treatment abroad/ Richiesta di informazioni relative agli spetti economici e logistici delle cure programmate* (APSS Trento)	PDF form	4	Collecting information on treatment abroad	All patients who want to be treated abroad
19	*Birth preparation courses* (APSS Trento)	PDF brochure	2	Inform about birth preparation courses	All foreign pregnant women
20	*Informed consent to transfusion/ Consenso informato alla trasfusione* (APSS Trento)	Word form	1	Collec consent to transfusion	All foreign residents

There are twenty documents available in English in the Alto Adige Asl website and in the Provincia Autonoma di Trento (Autonomous Province of Trento) APSS website, all of which can be analysed as in Table 7. No document was found in the Provincia Autonoma di Bolzano (Autonomous Province of Bolzano) Asl website.

Text 1 is a form needed to process a patient's personal and clinical data in view of practising sport at a competitive level. Texts 2-13 instruct patients about different medical procedures (e.g. urine, sputum, stool sample collection, etc.) that need to be carried out at home. They all follow an identical move structure and are very similar. Text 14, 15 and 20 are forms aimed at collecting the patient's consent to, respectively, cultural mediation, a surgical intervention and transfusion. Text 16 is a PDF brochure that informs foreign parents on how to fill in their child's health record. Text 17 informs on the APSS' privacy policy and patients' personal data processing. Text 18 is a bilingual Italian-English PDF form aimed at collecting information from a foreign health institution on the economic and logistics aspects necessary, for a patient, to access treatment. Text 19 deals with birth preparation courses, enrollment, etc. for pregnant women.

A qualitative linguistic analysis of the documents retrieved revealed numerous common features. To begin with, all the English texts are translations of original Italian documents. In the case of texts 14, 18 and 20, this is apparent in that they are bilingual texts. In all the other cases, the corresponding original Italian texts could easily be retrieved in the same sections where the English version was found, or by searching on the website's search engine. Only some of the material, in particular texts 14, 15, 16, 18 and 20, include calques from Italian, thus showing how their translated nature has significantly affected their language at all levels. Lexically, problematic words have been categorised into misspellings, ambiguous (not perfectly clear, though the meaning can be inferred through semantic connections) choices, unsuitable collocations, unsuitable choices of words (non-specialised language), unsuitable choices of words (specialised language). Examples can be seen in Table 7. All the other texts contain just a few examples of such unsuitable words.

Syntactically, some issues emerged from the same texts as above, the majority of which can be classified into the following categories: word/ clause order or absence, use of prepositions and determiners.

The analysis focused only on those texts that showed evident instances of dependence on L1 texts (about 30% out of all English-only material). Within this sub-corpus, the numerous calques from Italian gave rise to most of the lexico-syntactic issues reported in Tables 7 and 8. The words used for communication can be incorrect in combination with other terms (Table 7 column C), unclear as to the correct meaning implied (Table 7 column B), definitely incomprehensible as generic (Table 7 column D) or specialised

Table 7 – English-only material in English texts in Alto Adige Asl, autonomous Province of Trento APSS and autonomous Province of Bolzano Asl websites. Lexical issues

Doc. no.	*Misspellings/ misplaced words*	*Ambiguous (may be inferred) words*	*Unsuitable collocations*	*Unsuitable (non-specialised) words*	*Unsuitable (specialised) words*
2-13	**Stoll** (Stool)	If dentures are **worn**, they must be removed. (En.: vtr; wear dentures vs worn (showing signs of use)	**carry out** 3-4 **kneebends** in as **brief a time** as possible (as soon as possible)	**keep** the sample in a refrigerator (preserve, store)	
14		who **will make a secret** of the information (who agrees not to disclose)	you need to **express** your **consent** (provide/ give)	**health-operator** (health professional/ worker)	
16	form (from)			newborn's hearing **checks** (screening)	child health record **booklet (record)**
18		Patient authorized by the **relevant** institution (in charge)		person in charge of **liaison** body of the State where treatment is to be delivered (partner body)	
20		It may **reveal** necessary (prove to be) I consent to be **subdued** by this structure to the necessary transfusion intervention		The consent must be **demanded** to the **tutorial judge** (required, judge supervising a guardianship)	

Table 8 – English-only material in Alto Adige Asl, Autonomous Province of Trento APSS and Autonomous Province of Bolzano Asl websites. Syntactic issues

Doc. no.	*Word/clause order/absence*	*Prepositions*	*Determiners*
2-13			within 30-60 min. **of** collection.
14			I undersigned agree (the undersigned)
16	what is it and do we use it guidelines are provided on page 11, always with regard to vaccination, on how to deal with children with particular problems (chronic disease) and the contraindications to vaccinaton prevaccination questionnaire anamnesis	shall continue **in** improving **on** pages 62 **to** 67	from page 9 onwards subjects listed include the importance of vaccination (**the** subjects)
18	form of authorization		
19	advance hospitalization	telephone numbers for	enrolling **on** courses
20	blood transfusion homologous/ haemo components	Informed consent **to** the transfusion The consent must be given **from** both the parents	Informed consent to **the** transfusion (–) **The** consent must be given from both **the** parents

(Table 7 column E) terms. Moreover, entire phrases and sometimes clauses are out of place (Table 8 column A), prepositions can be missing or used wrongly (Table 8, column B), and determiners are generally misused.

4. Conclusions

The identity profile that emerges from the sample websites analysed – those of the four bi-/multilingual Italian regions of Valle d'Aosta, Sardinia, Friuli Venezia Giulia and Trentino-Alto Adige – reflects a deeply Italian-centred society approach in healthcare communication. Italian is the primary language of health in all the four regions considered. Valle d'Aosta, for example, which is officially also French-speaking, does not even include

a single French page in its Asl website. Neither does Sardinia, which otherwise strongly insists on the promotion of Sardinian in institutional communication (Regione Autonoma della Sardegna 2015). Of the five Friuli Asl, four have Italian-only versions. The only slightly different situation is the German-speaking province of Trentino-Alto Adige, where the German version of the websites is always the default one, reflecting the German linguistic majority (69.41%, Provincia Autonoma di Bolzano 2011). However, even in the case of the Alto Adige Asl, a complete Italian version is given.

The main reason behind the key role of Italian in public healthcare communication is that healthcare was a centralized service for decades, up until the 1990s reforms and the 2001 constitutional amendment in favour of devolution. This situation probably made Italian the only recognized 'language of health' for over 50 years. As a consequence, even in regions like Sardinia, which immediately after devolution introduced a bilingual policy, healthcare has never been chosen (yet) as a context where to experiment with bilingualism. The autonomous regions, however, have always enjoyed a higher degree of independence over specific local matters, and have always been attentive of languages as vehicles of (local) identities. The attention given to website versions in other languages by some Asl of Alto Adige or of Friuli testifies to this historical condition. The only area where Italian is not the main language – Alto Adige – nonetheless provides, at least virtually, a perfect Italian version of its Asl website.

As regards recent immigration and EU languages, their presence is so worryingly scarce as to be better defined as occasional. Apart from the partial German version of the Alto Friuli-Collinare-Medio Friuli Ass and the German (first-language) version of the Alto Adige, the Asl websites analysed do not include optional languages in their homepages. Not only, the rare documents in other languages encountered in the 16 websites reviewed, apart from being scattered randomly across sections (not necessarily dedicated to foreigners or immigrants), are leaflets and brochures, often provided in PDF format. This shows that information in other languages, although sometimes provided in many of them, remains granular: 'packages' of ready-to-use and -print indications and instructions are available, but their downloadable format often makes them old, out-of-date, and isolated from the dynamic entirety of the websites. Even more demoralizing is the relevant number of webpages containing specific information designed for foreign citizens – or even offering linguistic mediation services – written in Italian only, which testifies to some definite goodwill on part of the healthcare facilities, but makes one wonder how a foreigner with little or no command of Italian can ever access the online information intended to help him or her. Even when foreign language documents exist and are available on an Asl website, very often the link to the downloadable document is paradoxically an Italian phrase, e.g. the name of a language not in the language itself but in Italian, thus preventing accessibility to

and the usability of the document itself. The general scarceness of information in recent immigration and EU languages is hardly explainable, since Italy – and especially the four regions considered – yearly receives large numbers of people belonging to at least two classes of users who would mostly need it: immigrants (+19.19% in 2014, ISTAT 2015) and tourists (+4.2% in 2015, ENIT 2015). And where the material is available, generally it is a translation from Italian L1 into foreign language L2. In the case of English-only material, the qualitative analysis (par. 3) revealed how most incongruities in the texts retrieved regard the syntactic and not the lexical level, and the generic rather than the specialised terms. Moreover, the linguistic issues identified do not only fall within the above categories, which only represent quantitative indicators, but also into others. Most of this healthcare information can thus be deemed linguistically accessible at a basic level, but showing significant ambiguities that can often prevent full or partial comprehension. The use of translations rather than original texts is a frequent feature in Italian Asl communication (see Grego / Vicentini 2015) but a debatable one. Firstly, because the quantity of linguistic problems clearly points to L1 into L2 translation, which in itself is prone to creating ambiguity. Secondly, as a web communication strategy, translation appears to be little suitable, as it is a process that requires time and is hardly compatible with the fast pace of the internet. It is appropriate for 'frozen' text types such as the PDF leaflet or brochure, to which the texts retrieved belong. For faster exchanges, though, for example in the case of pandemics or alerts, translation requires passages and processes that would make it very little immediate and efficient. Translation is definitely more suitable for information that is supposed to appear long term on a website, e.g. general procedures or information. Generally speaking, translation in web healthcare communication can be compared to emergency treatment, whereas foreign language original communication could be said to equal prevention. The combination of both usually results in the best outcome. Finally, the use of translation, time-consuming as it is, probably also contributes to the low quantity of English texts in Friuli Venezia Giulia Ass and Alto Adige Asl websites. The previously existing German and English versions were discontinued, so a significant decrease in foreign and especially English language communication was highlighted. The decreasing public financial resources are perhaps one of the reasons why L2 into L1 translators were not employed. However, one effective strategy to cut costs and time could be to 'centralise' some of these translations, by producing a number of translated documents at Ministry (supra-regional) level that various local institutions can upload or link to in their own websites. Sparse such documents were found on Friuli Venezia Giulia Ass websites, though they were not included in the regional count and in the linguistic analysis as not specific to the region. For local communication, however, immediacy seems the key requirement, and this would tend to exclude translation as a mediated (hopefully outsourced to professionals) process.

Finally, even if inconsistent, the presence of a variety of brochures and guides in a variety of extra-European languages certainly indicates an initial trend towards tackling the issue of reaching out to specific groups of healthcare users otherwise little or not reachable through Italian (see Vicentini 2012).

References

Ass 3 Alto Friuli (2014) *ASS 3 Piano di Comunicazione Aziendale Anno 2014*. Available at *http://www.ass3.sanita.fvg.it/opencms/export/sites/ass3/it/azienda_informa/_docs/newsletter_aziendale/piano_di_comunicazione_2014.pdf*, last consulted on October 19th, 2014.

Azienda Sanitaria dell'Alto Adige/Südtirol (2013). Available at *http://www.asdaa.it.*

Azienda U.S.L. della Valle d'Aosta (2013) *Guide per gli Stranieri*. Available at *http://www.ausl.vda.it/datapage.asp?id=686&l=1*.

Azienda U.S.L. della Valle d'Aosta (2013) *Healthcare Assistance Guide for Foreign Citizens*. Available at *http://217.113.208.135/elementi/www/pdf/sisi/guidaInglese.pdf.*

Berruto G. (1987) *Sociolinguistica dell'Italiano Contemporaneo*. Roma, La Nuova Italia Scientifica.

Centro di ricerca sulle amministrazioni pubbliche "V. Bachelet" (2008) *Libro Bianco sui Principi Fondamentali del Servizio Sanitario Nazionale*. Libera Università degli Studi Sociali, Roma, LUISS "Guido Carli". Available at *http://www.ministerosalute.it/imgs/C_17_pubblicazioni_808_allegato.pdf.*

De Winter L., Gomez-Reino M. and Lynch P. (Eds. 2006) *Autonomist Parties in Europe: Identity Politics and the Revival of the Territorial Cleavage*. Barcelona, ICPS.

ENIT, Ente Nazionale del Turismo (2015) *Il Turismo Straniero in Italia*. Available at *http://www.enit.it/it/studi.html.*

European Commission (2014) *Health at a Glance: Europe 2014*. Available at http://ec.europa.eu/health/reports/docs/health_glance_2014_en.pdf.

Fairclough N. (1993) *Discourse and Social Change*. London, Polity Press.

Fairclough N. (1995) *Critical Discourse Analysis: The Critical Study of Language*. London and New York, Longman.

Fairclough N. (2003) *Analysing Discourse*. London, Routledge.

Fairclough N. (2006) *Language and Globalization*. London, Routledge.

Fairclough N., Cortese G. and Ardizzone P. (Eds. 2007) *Discourse and Contemporary Social Change*. Bern, Peter Lang.

Friuli Venezia Giulia (2012) *Analisi sulle Previsioni di Lavoratori Extracomunitari in Friuli Venezia Giulia per il 2013*. Available at *http://www.regione.fvg.it/rafvg/export/sites/default/RAFVG/formazione-lavoro/dati-informazioni-mercato-lavoro/allegati/previsioni_extracom_FVG2013_consegna_7dic2012.pdf,*

Garzone G., Poncini G. and Catenaccio P. (Eds. 2007) *Multimodality in Corporate Communication*. Milano, FrancoAngeli.

Garzone G. and Catenaccio P. (2014) "Multilingualism and Immigration in the Educational System: The Case of Italian Schools". Paper presented at the Symposium *Urban Multilingualism in the European Union*, Bruxelles, April 4th, 2014.

Grego K. and Vicentini A. (2011) "Holiday Dialysis in Italy on the Web: Multidimensional Hybridization in Institutional Healthcare Communication" in Sarangi S. *et al.* (Eds.), *Genre(s) on the Move: Hybridization and Discourse Change in Specialized Communication*. Napoli, Edizioni Scientifiche Italiane, pp. 393-406.

Grego K. and Vicentini A. (2015) "English and Multilingual Communication in Lombardy's Public Healthcare Websites" in Gotti M. *et al.* (Eds.), *The Language of Medicine: Science, Practice and Academia*. Bergamo, CELSB, pp. 255-275.

ISTAT (2010) C*ittadini Stranieri Residenti per Sesso e Paese di Cittadinanza al 31 Dicembre 2010*. Available at *http://www3.istat.it/salastampa/comunicati/non_calendario/20101012_00/testointegrale20101012.pdf.*

ISTAT (2014) *Diversità Linguistiche tra i Cittadini Stranieri*. Available at *http://search.istat.it/search?q=cache:cZAtAIQdqBoJ:www.istat.it/it/files/2014/07/diversit%25C3%25A0-linguistiche-imp.pdf%3Ftitle%3DDiversit%25C3%25A0%2Blinguistiche%2Btra%2Bi%2Bcittadini%2Bstranieri%2B-%2B25%252Flug%252F2014%2B-%2BTesto%2Bintegrale.pdf+lingue&output=xml_no_dtd&client=istat_fe&proxystylesheet=istat_fe&ie=UTF-8&site=istat_it&access=p&oe=UTF-8.*

ISTAT (2015) *Popolazione straniera residente – Bilancio*. Available at *http://dati.istat.it/Index.aspx?DataSetCode=DCIS_POPSTRBIL1&Lang=.*

Istituto Provinciale di Statistica – ASTAT (2015) *Turismo*. Available at *http://www.provincia.bz.it/astat/it/mobilita-turismo/turismo.asp*.

Kress G. and van Leeuwen T. (1990/2006) *The Grammar of Visual Design*. London, Routledge.

Kress G. and van Leeuwen T. (2001) *Multimodal Discourse. The Modes and Media of Contemporary Communication*. London, Arnold.

Meyerhoff M. (2006) *Introducing Sociolinguistics*. New York, Routledge.

Ministero della Salute (2014) *Finanziamento del Servizio Sanitario Nazionale. Available at http://www.salute.gov.it/portale/salute/p1_5.jsp?lingua=italiano&id=66&area=Il_Ssn.*

Ministero della Salute (2014) *InformaSalute – Accesso al Servizio Sanitario Nazionale per i Cittadini Stranieri – Opuscoli in Nove Lingue. Avilable at http://www.salute.gov.it/portale/documentazione/p6_2_5_1.jsp?lingua=italiano&id=118.*

Ministero della Salute (2015) *Elenco Aziende Sanitarie Locali e Strutture di Ricovero.* Available at *http://www.salute.gov.it/portale/documentazione/p6_2_8_1_1.jsp?id=13.*

Ministero della Salute (2016) Available at *http://www.ministerosalute.it.*

Provincia Autonoma di Bolzano (2011) *Alto Adige in Cifre, Popolazione Residente per Gruppo Linguistico ai Censimenti Popolazione dal 1880 al 2011*, p. 19. Available at *http://www.provinz.bz.it/astat/it/service/845.asp?830_action=300&830_image_id=307207.*

Provincia Autonoma di Bolzano (2013) *Andamento Turistico – Stagione Estiva 2013, Risultati Parziali*. Available at *http://www.provinz.bz.it/astat/it/mobilita-turismo/471.asp?Tourismus_action=4&Tourismus_article_id=235744.*

Provincia Autonoma di Trento (2013) *Servizio Comunicazione Interna ed Esterna*. Available at *http://www.apss.tn.it/Public/ddw.aspx?n=26373&DocAll=1.*

Provincia Autonoma di Trento (2013) *Azienda Provinciale per i Servizi Sanitari*. Available at *http://www.apss.tn.it*.

Pustertal.org (2013) *Important Phone Numbers*. Available at *http://www.pustertal.org/en/service/important-phone-numbers/.*

Regione Autonoma della Sardegna (2015) *Lingua e Cultura Sarda*. Available at *http://www.regione.sardegna.it/argomenti/cultura/lingua_cultura.html.*

Regione Autonoma Friuli Venezia Giulia (2015) Rapporto Statistico 2015 del Friuli Venezia Giulia. Available at *http://www.regione.fvg.it/rafvg/cms/RAFVG/GEN/statistica/FOGLIA37/,* last consulted on 1 September 2015.

Seidlhofer B. (2004) "Research Perspectives on Teaching English as a Lingua Franca". *Annual Review of Applied Linguistics* 24, pp. 209-239.

The Constitution of the Italian Republic, Official English Version. Available at *http://www.senato.it/documenti/repository/istituzione/costituzione_inglese.pdf.*
Vicentini A. (2012) "Institutional Healthcare E-Brochures and Multilingualism Issues in the Recent Immigration Era in Italy (2007-2010)" in Campagna S. *et al*. (Eds.), *Evolving Genres in Web-mediated Communication.* Bern, Peter Lang, pp. 53-76.

AUTHORS

Barbara Cappuzzo is a researcher in English Language and Translation at the Department of Psychology and Educational Sciences at the University of Palermo. Her research interests lie in the field of specialized discourse, with particular reference to intercultural medical language and to English for Medical Purposes. Her recent publications include: "Virtual Medical Communication in English. A Corpus-based Analysis of Inclusive *we*, *us* and *our* in the Intercultural *Clinical Blog*", in R. Salvi & W. Cheng (eds.), The Use of English in Intercultural Professional Settings: Virtual Encounters and Identities, *Textus*, 2013; "Medical English in Italian University Courses in Sports Sciences: Some Issues in Focus", in G. Iamartino, T. Canziani & K.S. Grego (eds.), *Perspectives in Medical English*, 2014. She is a member of the Associazione Italiana di Anglistica, and serves as a reviewer for the English section of the multilingual *Journal of Sport Sciences and Law*.

Franca Daniele graduated from Medical School at "G. d'Annunzio" University in Chieti. She is Assistant Professor in English Language and Translation at "G. d'Annunzio" University in Chieti, where she teaches English language and translation to undergraduate and postgraduate medical students. She is member of the Associazione Italiana di Anglistica (AIA). She has published a number of books specifically addressed to medical students. She has translated from Italian into English many scientific papers published in international medical journals and also medical books. Her research interests include translation and linguistic studies mainly in the field of medical English. Her most recent publications report on doctor-patient interaction in multicultural settings, studies on translating medical books from Italian into English and techniques involved with teaching English language to medical school students.

Giuliana Garzone is Full Professor of English, Linguistics and Translation at the Università degli Studi di Milano, Italy, where she co-ordinates the PhD

programme in Linguistic, Literary and Intercultural Studies. Her research interests are mainly in ESP, which she has explored in a discourse analytical perspective, integrating it with corpus linguistics. She has co-ordinated several research projects and published extensively on legal, scientific and business discourse as well as on translation and interpreting. Her latest publications include the volume *Le traduzioni come 'fuzzy set'. Percorsi teorici e applicativi* (*Translations as a 'fuzzy set'. Theory and applications*) (LED Edizioni, 2015), and the book chapters "Polyphony and Dialogism in Legal Discourse: Focus on Syntactic Negation" (2016) and "Evolutions in Societal Values and Discursive Practices: Their Impact on Genre Change" (2014). She is editor-in-chief of the journal *Languages Cultures Mediation*, and is co-editor of the series "Lingua, traduzione, didattica" ("Language, translation, language teaching") for the publisher FrancoAngeli. She sits on the advisory board of the international journals *Text & Talk* and *Journal of Multicultural Discourses.*

Kim Grego graduated in Translation from the University of Bologna (Italy) and received a doctor's degree in English for Specific Purposes from the University of Naples (Italy). She is an Assistant Professor of English Language and Translation at the University of Milan, where she teaches English Language and Linguistics. Her interests include Translation Studies, English for Special Purposes (Politics, Medicine & Healthcare, Bioethics), Critical Discourse Analysis and Genre Analysis. Publications on Medicine & Healthcare include: "English and Multilingual Communication in Lombardy's Public Healthcare Websites" (2015) in M. Gotti, S.M. Maci, M. Sala (a cura di) The Language of Medicine: Science, Practice and Academia, Bergamo, CELSB; and "Medical English as a research field: results, trends, and perspectives" (2014) in Canziani T., K. Grego, G. Iamartino (a cura di), Perspectives in Medical English, Monza, Polimetrica International Scientific Publisher.

Paola Clara Leotta is Associate Professor of English Language and Translation at the University of Catania. Her published and current research focuses on three fields of English Linguistics: Translation Studies, with special reference to audiovisual translation (dubbing and subtitling); Englishes, with a focus on Indian English and African English; English for Specific Purposes, and in particular the Popularization of the Discourse of Psychology and Psychiatry. She has also published on teaching English through Neuro-Linguistic Programming to University students.

Stefania M. Maci is Associate Professor of English Language and Translation at the University of Bergamo, where she teaches English linguistic courses at graduate and undergraduate level. She is member of the Research Centre on Specialized Languages (CERLIS), the Corpus and Language Variation in English Research Group (CLAVIER), British Association of Applied

Linguistics (BAAL) and Associazione Italiana di Anglistica (AIA). Her research is focussed on the study of the English language in academic and professional contexts, with particular regard to the analysis of medical, legal, and tourism discourses. Her most recent publications in the medical field include the co-edited volumes: *Insights into Medical Communication* (2015) and *The Language of Medicine: Science, Practice and Academia* (2015); the contributions: "'If MSM are frequent testers there are more opportunities to test them': conditionals in medical posters – a corpus-based approach" (2015); "*Health slips as the financial crisis grips*: Tension and Variation in medical discourse" (2015); "'These data support the *provocative* view that…': Evaluation in medical academic posters" (2015).

Renzo Mocini is a researcher in English Language and Linguistics at the School of Medicine and Dentistry, 'Sapienza' University of Rome, where he teaches Medical English. His major interests include language teaching methodology, ESP, Corpus Linguistics, Functional Grammar and narrative analysis. Among his recent publications are *Evidential Devices in English Medical Journals* (2015), *Gastronomic Salience: the story behind the dishes* (2015, co-authored with Graziano A.), *Expressing Surprise. A Cross-linguistic Description of Mirativity* (2014), *Communicating Findings. A Functional Analysis of a Medical Research Article* (2013).

Anna Franca Plastina is Assistant Professor in English Language and Translation at the University of Calabria and is qualified as Associate Professor of English Language and Linguistics, and Associate Professor of Glottology and Linguistics. She teaches ESP to undergraduates and postgraduates at the same university, where she is also board member of the doctoral programme in Languages for Special Purposes. Her research interests lie mainly in the fields of Discourse Analysis, Psycholinguistics, Multimodality, ESP and Computer-Mediated Communication. Her most recent publications include: *Putting the Plain into Pain Language in English for Medical Purposes: Learner Inquiry into Patients' Online Descriptive Accounts. Language Learning in Higher Education*, *CercleS Journal*, 2016; *Client Reviews of Lawyer Performance in Sociolegal Networking Media: An Appraisal Analysis.* In G. Tessuto *et al*., Cambridge Scholars Publishing, 2016; *Appreciating the Mediterranean Diet: Popularizing Nutritional Discourse Online*. In L. Abbamonte & F. Cavaliere, Cambridge Scholars Publishing, 2016; *Challenging Language Barriers in the Public Service: An Interdisciplinary Perspective (ed.)*. Aracne, 2016.

Annarita Tavani has a PhD in English Studies (Linguisitcs) and presently collaborates with Università degli Studi, Milan. Her research interests are mainly in the field of institutional communication as well as specialised discourse and L2 teaching. Her main publications include (2012) "FAO's

Food Insecurity Reports: An Evolving Genre". In *Genre Change in the Contemporary World. Short-term Diachronic Perspectives*, edited by Giuliana Garzone/Paola Catenaccio/Chiara Degano, 147-162. Bern: Peter Lang. (2013) *Institutional Language and Discourse in International Organizations*. Saarbrücken: Lambert Academic Publishing.

Alessandra Vicentini received a degree in History of the English Language and a doctor's degree in English Language Studies from the University of Milan (Italy). She is currently Associate Professor of English Linguistics and Translation at the University of Insubria, Varese (Italy), where she teaches English Linguistics and English for Scientific Purposes. Her research interests include English and Anglo-Italian grammaticography and lexicography, ESP, Discourse and Genre Analysis. Recent publications are: *Anglomanie settecentesche: le prime grammatiche d'inglese per italiani*, 2015; Vicentini *et al.* "Intercultural and Ideological Issues in Lexicography: A Prototype of a Bioethics Dictionary" in Facchinetti R. (ed.), *Cultural identities in English lexicography*, 2012; "Institutional healthcare e-brochures and multilingualism issues in the recent immigration era in Italy (2007-2010)" in Campagna S., Garzone G., Ilie C., Rowley-Jolivet E. (eds.), *Evolving genres in web-mediated communication*, 2012.

Marianna Lya Zummo is researcher at the University of Palermo, where she teaches English Language and Linguistics. Her interests cover issues in sociolinguistics, genre, communication dynamics and studies on the dimension of modality and evidentiality. Her research is primarily related to issues in health communication in online contexts. Recent publications include: *Health Quering in the Digital Era. The Language of Health 2.0* (2015), *Credibility and Responsibility in User-generated Health Posts: Towards a Co-construction of Quality Knowledge?* (2015), *The Web Participatory Environment: a New Genre in Health Exchange* (2015), *Evidentiality and Commitment: An example from Sports Medical Writing* (2014); *Formal and Informal Features in CMMC. Some observation on Doctor-Patient Interaction in Online Communication* (2012).

Lingua, traduzione, didattica
diretta da A. Cardinaletti, G. Garzone, L. Salmon

Ultimi volumi pubblicati:

CHIARA BRANCHINI, ANNA CARDINALETTI (a cura di), *La lingua dei segni nelle disabilità comunicative* (disponibile anche in e-book).

GIOVANNA CARLONI, *Corpus Linguistics and English Teaching Materials.*

ELENA ERRICO, MARA MORELLI (a cura di), *Le sfide della qualità in interpretazione.* Ricerca, didattica e pratica professionale.

GIOVANNA CARLONI (a cura di), *Insegnare italiano a stranieri.* Percorsi operativi.

MIRELLA AGORNI (a cura di), *Memoria lingua traduzione* (disponibile anche in e-book).

MAURO FERRARESI, *Il lavoro del traduttore.* Aspetti linguistici e semiotici.

ANTONELLA NEGRI (a cura di), *Insegnare Italiano a stranieri.* Percorsi formativi.

CARMELA BERTONE, *Fondamenti di grammatica della Lingua dei segni italiana*.

RENATO ONIGA, *Il latino.* Breve introduzione linguistica.

GIAN LUIGI DE ROSA, *Mondi doppiati.* Tradurre l'audiovisivo dal portoghese tra variazione linguistica e problematiche traduttive.

PAOLO DRIUSSI, *Guida alla lingua ungherese* (disponibile anche in e-book).

FRANCESCO GRANDE, JAN JAAP DE RUITER, MASSIMILIANO SPOTTI (a cura di), *Mother Tongue and Intercultural Valorization: Europe and its migrant youth* (E-book).

MIRELLA AGORNI (a cura di), *Prospettive linguistiche e traduttologiche negli studi sul turismo* (disponibile anche in e-book).

MARIACRISTINA PETILLO, *La traduzione audiovisiva nel terzo millennio.*

LAURA SALMON, MANUELA MARIANI, *Bilinguismo e traduzione.* Dalla neurolinguistica alla didattica delle lingue.

ANNA CARDINALETTI, GIULIANA GARZONE (a cura di), *L'italiano delle traduzioni.*

ANNA CARDINALETTI, CARLO CECCHETTO, CATERINA DONATI (a cura di), *Grammatica, lessico e dimensioni di variazione nella Lis* (disponibile anche in e-book).

GLORIA BAZZOCCHI, PILAR CAPANAGA, SARA PICCIONI (a cura di), *Turismo ed enogastronomia tra Italia e Spagna*. Linguaggi e territori da esplorare (disponibile anche in e-book).

PAOLA LEONE, TIZIANA MEZZI (a cura di), *Didattica della comunicazione orale.* Lingue seconde e italiano a scuola e all'università (disponibile anche in e-book).

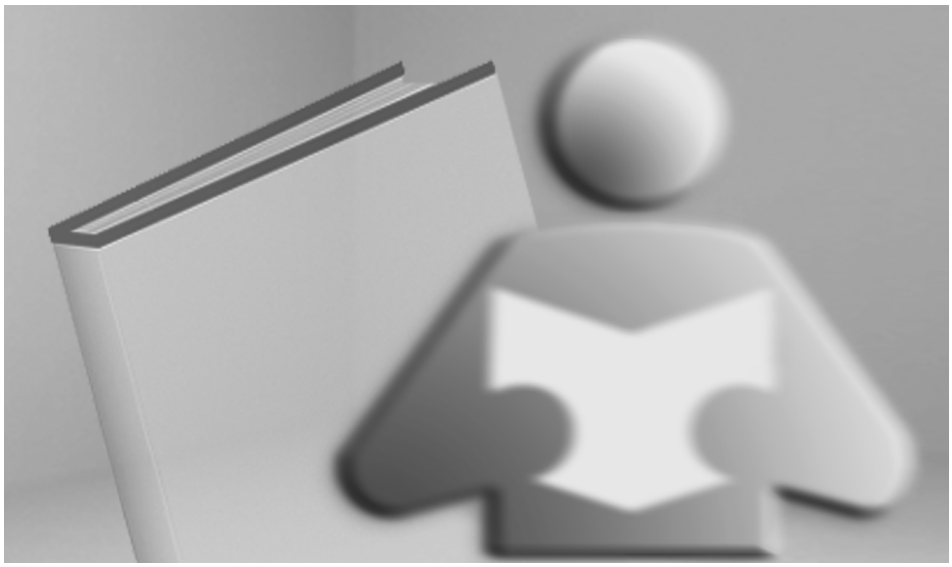
GLORIA BAZZOCCHI, RAFFAELLA TONIN (a cura di), *Identità e genere in ambito ispanico* (disponibile anche in e-book).

PATRIZIA CORDIN (a cura di), *Didattica di lingue locali*. Esperienze di ladino, mòcheno e cimbro nella scuola e nell'università (disponibile anche in e-book).

STEFANIA CAVAGNOLI, MIRCA PASSARELLA (a cura di), *Educare al plurilinguismo.* Riflessioni didattiche, pedagogiche e linguistiche (disponibile anche in e-book).

QUESTO LIBRO TI È PIACIUTO?

Comunicaci il tuo giudizio su:
www.francoangeli.it/latuaopinione.asp



VUOI RICEVERE GLI AGGIORNAMENTI SULLE NOSTRE NOVITÀ NELLE AREE CHE TI INTERESSANO?

Seguici in rete | Sottoscrivi i nostri feed RSS | Iscriviti alle nostre newsletter

FrancoAngeli