CERLIS

Centro di Ricerca sui Linguaggi Specialistici
Research Centre on Languages for Specific Purposes

Larissa D'Angelo / Stefania Consonni (eds.)

New Explorations in Digital Metadiscourse

10

2021

CERLIS Series

Series Editor: Stefania M. Maci

Assistant Editors: Patrizia Anesa, Stefania Consonni, Larissa D’Angelo

Each volume of the series is subjected to a double blind peer-reviewing process.

CERLIS Series
Volume 10

Larissa D'Angelo / Stefania Consonni
(eds.)

New Explorations in Digital Metadiscourse

CELSB
Bergamo

CERLIS SERIES Vol. 10

CERLIS
Centro di Ricerca sui Linguaggi Specialistici
Research Centre on Languages for Specific Purposes
University of Bergamo
www.unibg.it/cerlis

New Explorations in Digital Metadiscourse
Editors:
ISBN: 9788897253051

Published in Italy by CELSB Libreria Universitaria
Via Pignolo, 113 - 24121, Bergamo, Italy

Contents

LARISSA D’ANGELO / STEFANIA CONSONNI

Dissemination, interaction and negotiation: Exploring digital metadiscourse (*cont’d*)

0. Volume overview

Most of the contributions collected in the present volume can be considered a product of the international conference entitled ‘MAG 2019 – Metadiscourse in Digital Communication: What has changed?’, hosted by the Research Centre on Languages for Specific Purposes (CERLIS) of the University of Bergamo, in June 2019. The conference proved to be an inspiring opportunity for many scholars who had been working on the many facets of metadiscourse theory. So many were the contributions received after the conference, that two volumes have been published since then: a collection of essays devoted to *Digital Communication and Metadiscourse: Changing Perspectives in Academic Genres,* published as volume 9 in the CERLIS series (Consonni / D’Angelo / Anesa 2020), and an edited volume entitled *Metadiscourse in Digital Communication: New Research, Approaches and Methodologies* (D’Angelo / Mauranen / Maci 2021).

Which makes this volume the third (and final) book dedicated to new explorations in the relationships between metadiscourse and digital communication. Much like the previous ones, it is a collection of works that interprets metadiscourse in different and innovative ways. As noted by Mauranen and Ädel (2010; see also, among others, Crismore 1983; Vande Kopple 1985; Mauranen 1993; Crismore 1989; Hyland 2005; Ädel 2006; Mauranen 2010; Hyland 2009, 2017), metadiscourse has maintained a steady critical interest among scholars since the 1990s. Its core conceptualisation can be said to 'centre around discourse about discourse'. This is the fil rouge that connects every researcher involved in metadiscourse studies, because it is almost always included in definitions and interpretations of the very object of study. Despite its established status and enduring attraction, over the last forty years metadiscourse has been managed and reinterpreted in eclectic and interesting ways, so that still today new, thought-provoking studies continue to emerge, driving researchers towards uncharted territories (see D'Angelo / Consonni 2020). The contributions contained in this volume are an example of the diversity found in this evolving field of study.

This volume is organised in three main sections. Part 1 contains three chapters focusing on digital metadiscourse and the (vertical and/or horizontal) dissemination of scientific knowledge. These studies concentrate on the multiliteracy and multifunctional potential that is deployed by metadiscursive resources, both verbal and visual in nature – irrespective of their being applied in such diverse genres as posters, infographics and visual abstract – in specialised contexts, whereby the sharing of key and sensitive expert-to-expert (and expert-to-laymen) contents seems to draw much of its rhetorical efficacy from non-propositional aspects of the communication.

A second section follows, with three contributions concerned with the relationships between the surface features of digital metadiscourse and their pragmatic function in the patterning of social interaction. These studies investigate the various ways in which metadiscursive strategies can impact on (and actually shape) different models of interaction between and among people in the digital environment. Be it with respect to different genres such as promotional social network posts, informative 'hard'-science blogs or instructional Google search results, and in regard of stance or frame markers – as well as of other typical interactive and interactional resources –, these studies provide insights into an even more radical social function of metadiscourse, one that decisively impinges upon the ways in which issues like global marketing policies, sexual and gender politics and the conceptualization of death are dealt with by people in daily interaction.

The three final chapters revolve around digital metadiscourse and the cultural negotiation of people's experience in a variety of practical domains. In each of the contributions, we can see how metadiscourse devices interlock and interact with more broadly cultural issues to an even greater extent. Be it in matters of analysing labour policies (and power relationships) within new markets, such as the ride-hailing business; of narrating and sharing experiences of cultural shock and trauma, such as migration; or of teaching young scientists how to boost their results so that they reach out to the whole world within a (post-COVID) global effort to reinforce medical competence and communication skills, these contributions once again prove metadiscourse as a key factor to our understanding of the multiple ways in which the negotiation of complex meanings takes place in the human environment. Especially – as MAG 2019 has collectively and fruitfully illustrated, and as these new explorations will further show – in digital communication.

The chapters will be hereby presented, divided by section.

1. Digital metadiscourse and the dissemination of scientific knowledge

The first part of the volume opens with Michela GIORDANO and Maria Antonietta MARONGIU's contribution. For their study they have used a multimodal perspective to analyse an *ad-hoc* corpus of 30 public information posters selected from English-speaking institutions and health care associations, published on the Internet during the coronavirus pandemic in 2020 and 2021. At one level, this study explores the multimodal character of inspirational ads, educational posters and fact sheets, by identifying their verbal-visual interplay and how the two parts might be interacting with one another. From this perspective, intertextuality is also considered at different levels within these genres. On another level, metadiscursive features are examined through the lens of rhetoric, in order to identify the linguistic devices that guide and orient the audience in the interpretation of the message. In their analysis, we see how the multimodal discourse that merges visual and verbal elements contributes to the logical, credible and affective appeals which make posters and advertisements both persuasive and influential, as well as instructive and educational acts of communication.

The following chapter, by Stefania CONSONNI, analyses a taxonomy of linguistic and graphical strategies used for the encoding of epistemicity in scientific discourse, in particular regard to verbal-and-visual co-semiotization and within a corpus of 40 traditional research articles and matching digital synopses, published in the *British Medical Journal* in 2017-18. Words and visuals deploy different protocols concurring in the discursive validation of evidence-based knowledge. While the scriptural mode constructs reality using written, abstract, discontinuous and temporal resources, visual language, coaxing data into patterns, frames and visualizes phenomena and processes using signs that are sensorial, contiguous and spatial. This may facilitate the quantification and analysis of scientific data, along with pattern recognition and comparison, and further cognitive functions. Within the framework of Systemic Functional Grammar, and drawing from social semiotics and medical linguistics, this paper looks at cross-semiotic epistemic metadiscourse, with a view to discussing the main boosting and hedging strategies used for modalizing meanings in analogue *vs*. digital communication.

Carmen SANCHO GUINDA concludes this part of the volume by exploring the recent changes imposed on the rhetoric of the graphical abstract by Elsevier, a pioneer publisher to demand the genre in its high-ranking scientific journals' guidelines to authors. After reviewing the chief challenges posed by the graphical abstract in science dissemination, particularly that of stylisation, and having examined the rhetorical contribution of Elsevier's new exemplars, she pays special attention to the possible repercussions on metadiscursive practices and ultimately on the democratisation of scientific content. Her conclusion is that Elsevier's new guidelines may brand editorial identity, but also leave some crevices for stylisation (which may jeopardise correct interpretation), and incur in visual redundancy in predominantly verbal summaries, while simultaneously stifling authorial creativity.

2. Digital metadiscourse and the patterning of social interaction

The second part of the volume opens with a chapter by Elena MANCA, who investigates how the use of social media as a promotional tool in the wine industry has attracted the interest of scholars particularly in the marketing field. Very little attention has however been paid so far to the way interactive and interactional devices have been used in the promotion of wines and wine events. To fill this gap, she collected eight months of Facebook posts by nine wine companies based in Australia and in California (US). The posts were analysed in their metadiscursive resources with the help of Corpus Linguistics methods, in order to identify and discuss the many linguistic features of Facebook promotion as well as the influence of cultural factors on the linguistic strategies that are employed.

Girolamo TESSUTO's contribution sets out to describe and interpret how evaluative stance-making linguistic features and gender identities go side by side in disciplinary blogs dedicated to 'hard' science research-related content and dissemination, and approached from the perspective of information, text, and genre. The author considers, on the one hand, how evaluative stance features used by male and female writers compare in the open format of academic science blogging and disciplinary practices; on the other hand, he explores how evaluative stance-making meanings and resources allow male and female bloggers to articulate particular aspects of their academic and disciplinary identities and roles. The empirical data source for this study came from a randomized corpus of social media texts from 100 blog posts on medicine and biology, 'hard' disciplines sanctioned by the UK-based BioMed Central (BMC) publishing platform, and collected over a five-year period (2015-2020). These findings not only reveal that the patterns of text meanings, roles and identities are grounded in the discoursal choices of argumentative stance features available for social goals of the genre, but they also emphasize that gender impinges on disciplinary discourse and accounts for how research issues can be discussed in agreed ways.

Michele SALA's chapter ends the second section of the volume by investigating the function performed by hyperlink titles in Google result pages as metadiscursive frames markers. By functioning as pre-sequences with respect to the associated texts, they perform an important cognitive function for preparing and introducing sensitive topics – e.g. end-of-life practices – and the relevant discussion carried out in online contents. The main assumption of this study is that such pre-sequences may metadiscursively function as framing devices. By positing data (i.e. the topic) and anticipating claims they can be considered as argumentative resources guiding readers in processing the associated anchor. The aim of the author is to see how this potential function, inherent in hyperlink titles, is used to rhetorically stimulate meaning negotiation when assessing culturally relevant and possibly ideology-laden contents.

3. Digital metadiscourse and the cultural negotiation of experience

The contribution by William BROMWICH opens the third and last section of the collection by exploring how the advent of the so-called sharing, gig or platform economy, in particular the spread of ride-hailing firms such as Uber and Lyft, has given rise to new forms of digital communication. Bromwhich explains how the use of signup bonuses, ratings, promotions, competitions and non- monetary rewards is intended to provide incentives for drivers to work longer and longer hours while companies progressively cut pay rates, with the online discourse intended to manage relations with the drivers primarily for the benefit of the digital platforms. The result is what has been characterized as the "gamification" of ride-hailing, with the terminology of hiring, employment contracts and wages being displaced by the discourse of video game techniques, graphics and non-cash rewards. This study examines the ride-hailing discourse in terms of the use of metadiscourse devices such as hedges, boosters, attitude markers, engagement markers and self-mention, casting light on their pragmatic functions and on the ongoing process of gamification in the digital economy.

Cinzia SPINZI's study investigates English and Italian digital campaigns on migration, developed and run by international organizations, in order to debunk false myths and stigmatization of migrants and refugees as either victims or threats to society. Spinzi's contribution looks at micro-level features of the rhetoric of the text, in order to explore how voice is given to otherness and how migrants engage the public for inclusion and integration purposes. Despite the two small datasets being translated texts, the analysis uncovers some patterns of variation across the two languages, with English texts deploying elements of cautiousness while the Italian ones appearing more assertive.

A chapter by Larissa D'ANGELO concludes the third and last part of the volume by presenting an exploratory analysis involving 1st-year medical students enrolled in the International School of Medicine and Surgery of the University of Milan Bicocca. These students were exposed to current guidelines in academic poster production within the medical field and were asked to produce a poster following a short field research of their choice. With their data at hand, they each designed a poster whose readability and salience was 'tested' using a mobile eye-tracking lab. By observing the scan paths and heat maps obtained thanks to the eye tracker, and how these involved specific visual and textual metadiscourse elements, each student obtained important information regarding the readability and the careful positioning of salient elements and redesigned their posters accordingly. In this chapter, the theoretical assumptions regarding multimodality and visual metadiscourse that led to the exploratory study are discussed, followed by two examples of poster analyses, drawn from the activity carried out in class. The chapter then provides some educational insights and a brief discussion on poster formats.

Essential references

Ädel, Annelie 2006. *Metadiscourse in L1 and L2 English*. Amsterdam: John Benjamins.

Ädel, Annelie / Mauranen, Anna 2010. Metadiscourse: Diverse and Divided Perspectives. *Nordic Journal of English Studies* 9/2, 1-11.

Crismore, Avon 1983. *Metadiscourse. What It Is and How It Is Used in School and Non-School Social Science Texts*. Urbana/Champaign: Illinois University Press.

Crismore, Avon 1989. *Talking with Readers. Metadiscourse as Rhetorical Act*. New York: Peter Lang.

Consonni, Stefania / D'Angelo, Larissa / Anesa, Patrizia (Eds.) 2020. *Digital Communication and Metadiscourse. Changing Perspectives in Academic Genres*. Bergamo: CERLIS.

D'Angelo, Larissa / Consonni, Stefania (2020). A Tale of Three Waves; Or, Concerning the History and Theory of Metadiscourse. *Ibérica* 40, 13-34.

D'Angelo, Larissa / Mauranen Anna / Maci, Stefania M. 2021. *Metadiscourse in Digital Communication. New Research, Approaches and Methodologies.* London: Palgrave Macmillan.

Hyland, Ken 2005. *Metadiscourse. Exploring Interaction in Writing*. London: Continuum.

Hyland, Ken 2009 *Academic Discourse. English in a Global Context*. London: Continuum.

Hyland, Ken 2017. Metadiscourse: What Is It and Where Is It Going? *Journal of Pragmatics* 113, 16-29.

Mauranen, Anna 1993. *Cultural Differences in Academic Rhetoric. A Textlinguistic Study*. Frankfurt am Main: Peter Lang.

Mauranen, Anna 2010. Discourse Reflexivity: A Discourse Universal? The Case of ELF. *Nordic Journal of English Studies* 9/2, 13-40

Vande Kopple, William 1985. Some Exploratory Discourse on Metadiscourse. *College Composition and Communication* 36, 82-93.

PART 1

Digital metadiscourse and the dissemination of scientific knowledge

Michela Giordano / Maria Antonietta Marongiu

Metadiscourse, rhetoric and the pandemic: A verbal-visual analysis of public information posters[1]

1. Introduction

The outbreak of the worldwide Covid-19 pandemic has had a radical effect on public-sphere communication in both traditional mainstream and new social media. The information on healthcare and risk prevention that has aimed to help people cope with 'staying safe' and contain the disease, has appeared in a number of different guises and forms. By employing various media channels, communication campaigns have used advertisements and posters designed to influence people's behaviour and persuade communities to pay more attention to the rapid spread of the virus.

Here, we have used a multimodal perspective to analyse an *ad-hoc* corpus of 30 public information posters selected from English-speaking institutions and health care associations. The posters under scrutiny were published on the Internet during the first waves of the coronavirus pandemic in 2020 and the first months of 2021.[2]

[1] Though this chapter has been jointly planned, Michela Giordano is responsible for sections 3 and 4.2 and Maria Antonietta Marongiu is responsible for sections 2 and 4.1. Introduction and Conclusions are a shared effort.

[2] All attempts have been made to obtain permission to reproduce the posters in this research work. Some of them are covered by the license of Fair Use Law, which allows the use of copyrighted materials in certain contexts, such as educational or non-profit applications. Permission to reproduce some of the images was kindly granted by the relevant institutions, and in any case all sources are duly cited in this work. Unfortunately, some of the posters are no longer available on the web due to the ever-evolving developments of the

The aim was to look at how verbal communication and visual representation interact to frame a persuasive and influential informative act. The first step of this research involved identifying a number of Covid-19 topical themes commonly found in the media, ranging from social distancing and lockdown to the physical and psychological effects of quarantine, such as the sedentary lifestyle that has led to consequent weight gain. Other themes include the use of personal protective equipment, such as gloves and masks, the battles of the front-line workers and the health-care system along with aspects linked to community, togetherness and collective coping. All these themes have been used and manipulated in order to create new digital content by both the traditional and official producers and distributors of information and by the health care and scientific communities.

At one level, this study explores the multimodal character of inspirational ads, educational posters and fact sheets, by identifying their verbal-visual interplay and how the two parts might be interacting with one another. From this perspective, intertextuality is also taken into account at different levels within these genres, all of which are part of our corpus. On another level, metadiscursive features are examined through the lens of rhetoric in order to identify the linguistic devices that guide and orient the audience in the interpretation of the message. Certain linguistic aspects are used for effective communication rather than merely for ornamentation and embellishment of the texts. The multimodal discourse that merges visual and verbal elements contributes to the logical, credible and affective appeals which make posters and advertisements both persuasive and influential, as well as instructive and educational acts of communication.

This work is organised as follows: after this introductory section, part two presents the theoretical foundations of the study by discussing the concept of metadiscourse and how rhetorical appeals can be accomplished through the use of metadiscursive features. After introducing our corpus and the research methodology, we will provide a discussion of metadiscourse and of the rhetorical traits identified in

---

pandemic and to the shifting interest towards the vaccine issue on the part of institutions and health-care centres.

the posters under scrutiny. The last section concludes by summarizing our key findings.

2. Theoretical framework

In the field of discourse analysis, a number of definitions of the concept of metadiscourse have been formulated by scholars at different times. The approach considered in this study, often termed *interactive*, views metadiscourse as a form of interaction between the writer and the reader. Vande Kopple (1985, 2002) referred to metadiscourse as being the non-propositional subject matter level of discourse that writers use to help the reader to successfully relate to the topical material or propositional content provided. The classification made by Vande Kopple (1985: 87) between textual and interpersonal metadiscourse strategies was integrated into Hyland's interpersonal model of metadiscourse (2005a: 49; cfr. also Hyland 1998b, 2004, 2017). Writing is viewed as a social engagement where writers project themselves into their discourse and in so doing they reveal their attitudes and commitments. Crismore and Abdollehzadeh highlight that "[m]etadiscourse elements are rhetorical tools that make a text reader-friendly and as such enable the writer to reach the audience" (2010: 196). Metadiscourse strategies and conventions are language and culture bound, yet their functions can be classified within the boundaries of classical and modern rhetoric.

The research on metadiscourse has focused especially on English academic text production (Hyland 1998a, 2000; Hyland/Tse 2004; Swales 1990), although some research has also been devoted to the use of metadiscourse in business products, such as company annual reports (Hyland 1998b), corporate press releases (Liu/Zhang 2021), business letters (Xiaoqin 2017) and job postings (Fu 2012), to name but a few.

Research on the language of advertising has long identified and classified a number of discourse strategies that copywriters typically rely on, such as regular patterns of textual choices; foregrounding strategies like alliteration, repetition of letters and sounds, assonance, language mixing and unpredictable spelling; rhetorical questions or commands, implicit comparison, ellipsis, substitution and shorter clauses; certain semantic relations such as homonymy, polysemy and ambiguity and other semantic associations; choice of specific language dialects or register; imitation of informal conversation; figurative language, especially metaphor, synecdoche and metonymy (Fuertes-Olivera / Velasco-Sacristán / Arribas-Baño / Samaniego Fernández 2001: 1295). According to Fuertes-Olivera et al., "these different discourse strategies seem to balance the referential, conative, and poetic functions of language" (2001: 1295).

In their investigation of metadiscourse markers in English and Persian medical texts, Gholami / Tajalli / Shokrpour (2014: 11) argue that "[m]etadiscourse contributes to the art of persuasion or rhetoric by the following: it promotes logical appeals when it explicitly links ideas and arguments; it implies credibility of the writer's authority and competence; and it signals respect by acknowledging the reader's viewpoint".

In order to persuade readers, writers often use metadiscourse by resorting to rational, credible, and emotional appeals. Given that metadiscourse helps writers attract and engage readers, its use serves to achieve a persuasive goal. Since ancient times, the main categories of persuasion have been identified as *pathos* (affective appeals to the readers), *logos* (rational appeals linking the arguments), and *ethos* (related to the writer's authority and competence) (Liu/Zhang 2021: 2).

In the field of textual and visual metadiscourse analysis, D'Angelo (2018) considers academic posters and applies two frameworks of analysis, i.e. Hyland's theoretical approach to metadiscourse for the written text and Kress/Van Leeuwen's (1996) for the description of the visual elements. Her analysis reveals that visual interactive resources play a fundamental role in poster design because they help readers understand the content and manage the flow of information, making an academic poster comprehensible to the audience. A similar dual approach is taken in this paper.

Although the studies mentioned here have added to our understanding and knowledge of metadiscourse, a systematic analysis of metadiscourse features utilized to enhance persuasion and influence public opinion in Covid-19 information posters has not been conducted yet. Therefore, this study discusses the old concepts of rhetoric and how rhetorical appeals can be achieved by resorting to metadiscourse and visual interactive resources.

3. Corpus and methodology

This study considers a corpus of 30 public information posters in English, issued both by institutions and health care associations during the Covid 19 pandemic, to see how verbal communication and visual representation intermingle and interact to create a persuasive and convincing informative act. For this work, 15 inspirational ads, educational posters and fact sheets were selected from the original corpus and analysed qualitatively. A quantitative analysis of the verbal text through the most widely known and used concordance software was not feasible. Therefore, the metadiscourse markers and the rhetorical features found were checked and investigated in their verbal and visual context.

To start with, several themes were identified in digital products regarding the pandemic and many of these were also found in the posters considered. The general topical themes during the pandemic have been:

1. social distancing;
2. lockdown and quarantine;
3. difficulties in adjusting to closure;
4. sedentary lifestyle and overeating;
5. media and social network addiction;
6. certain product shortage and irrational stockpiling;
7. face masks, vaccines, and herd immunity;
8. reactions to restrictions:
9. front line workers and the health care system;
10. community, togetherness and collective coping.

At one level, this study has explored the multimodal character of products, by identifying their verbal-visual interplay and how the two parts might be interacting with one another (Kress/Van Leeuwen 1996, 1998, 2002). Type, size and colour seem to be fundamental features to consider, since they enhance legibility, help clarify parts of the discourse and the organization of the text, as highlighted by D'Angelo (2018), who considers the visual modality in academic posters as a visual interactive resource. The arrangement of verbal and visual information is also important since ideas and images are connected through repetition of texts and colours or shapes. However, the various semiotic codes can also act independently (Kress/Van Leeuwen 1996). The data can also be organised by means of graphic elements such as flowcharts, tables, and figures along with other images. However, it should be remembered that there are certain physical restrictions in the layout of a poster. In point of fact, they limit the amount of text displayed, assigning instead more value to the visual aid provided and to the interpretation thereof. In this sense, visuals acquire a powerful and highly effective interactive, metaphorical and metadiscursive value and significance. Both semiotic codes, visual and verbal, contribute to the meaning-making purposes (D'Angelo 2018) even in promotional or inspirational ads and posters such as the ones devoted to Covid-19.

Texts which are multimodally articulated with verbal and visual content are not only written but also "designed" (Kress/Van Leeuwen (1998: 187). Kress and Van Leeuwen argue that

> [t]he semiotic modes in such texts can interrelate in different ways. Writing may remain dominant, with the visual fulfilling a 'prosodic' role of highlighting important points and emphasizing structural connections. But it may also diminish in importance, with the message articulated primarily in the visual mode, and the words serving as commentary and elaboration. Visually and verbally expressed meaning may be each other's double and express the same meanings, or they may complement and extend each other, or even clash and contradict" (1998: 187).

Therefore, the interplay of the verbal and the visual should be adequately described and visually expressed meanings should be adequately analysed.

On the other level, metadiscursive features have been examined through the lens of rhetoric in order to identify the linguistic aspects that guide and direct the audience, signalling the presence of the author and calling attention to the message itself (Crismore 1989: 7). Certain linguistic aspects are used for effective communication rather than just for ornamentation (Crismore 1989; Conley 1983). "Metadiscourse pursues persuasive objectives" since it helps writers and speakers "to engage their audience, signal relationships, apprise readers of varying certainty and guide their understanding of a text" (Hyland 2005a: 63). The relationship between metadiscourse and rhetoric is scrutinized following two different lines of thought, both based on Classical Rhetoric. The first is the line developed by Conley (1983, in Crismore 1989), which examines figures of presence, figures of focus and figures of communion. Figures of presence, such as repetition, help make the discourse more vivid and memorable. Figures of focus are both verbal and visual metaphors, and figures of communion include allusions, intertextual references and questions which create a connection with the audience.

The second line of thought to consider is the relationship established by Hyland (2005a) between metadiscourse and the appeals of classical rhetoric, i.e. *Ethos*, *Pathos* and *Logos*. The ethical appeal is mostly used to convince an audience of the author's authority, credibility and character, to show fairness and expertise on the subject matter. The emotional appeal is utilized to persuade an audience by invoking empathy, provoking curiosity, evoking sympathy, inspiring anger, and prompting action and reaction, through examples, stories of emotional events and their implied meanings. Finally, logical appeal is employed to convince an audience by means of logic or reason, by citing facts and statistics, historical and literal analogies, and certain authorities on a subject.

4. Discussion

4.1. Conley's rhetorician's perspective

The media plays a vital role in influencing citizens' attitudes and behaviours. Since the outbreak of the pandemic, linguistics has studied coronavirus-related discourse production from a variety of perspectives, mainly to investigate the relationship between the progress of the epidemic and its manifestation in discourse. This work presents a discussion on how visual and verbal messages and metaphors used in institutional and non-institutional posters about the Covid-19 pandemic interactively impact on the intended audience. Studies on metadiscourse are usually based on the assumption that both writer(s) and intended readers are members of the same community. Accordingly, the discourse produced can take on an interactional dimension, as the writer constructs it based on the interlocutors' knowledge and assumptions. A number of features also identified as typically used in advertising were found to occur in our corpus. In other words, these informative posters are created by using the structural features recurring in the promotional genre.

Following Conley (1983, cited by Crismore 1989: 83) metadiscourse in the posters under scrutiny will be examined from a rhetorician's perspective, focusing on figures of presence, figures of focus and figures of communion as explained in the methodology section. It will be argued that these figures of thought are rhetorical strategies mainly used to contribute to effective communication. Figures of presence include metadiscursive devices which help reinforce the content matter by intensifying the discourse, thereby making it more vibrant, powerful and striking. Figures of focus are both verbal and visual metaphors, or definitions (sometimes introduced by parenthetical phrases), which help guide the audience's interpretation. Figures of communion include allusions, intertextual references and questions which rely on the common ground shared with the intended audience in order to create a bond with them.

The first poster by the Rowan Cabarrus Community College, NC, USA in Fig. 1, displays the slogan *Help slow the spread of Covid-19* in a white banner on a Siena yellow background, followed by the headline *Stay Healthy* in bold dark blue letters. The degree of saturation of the background colour, which could be defined as intense, contributes to the affective meaning of the overall message (Kress/Van Leeuwen 2002).

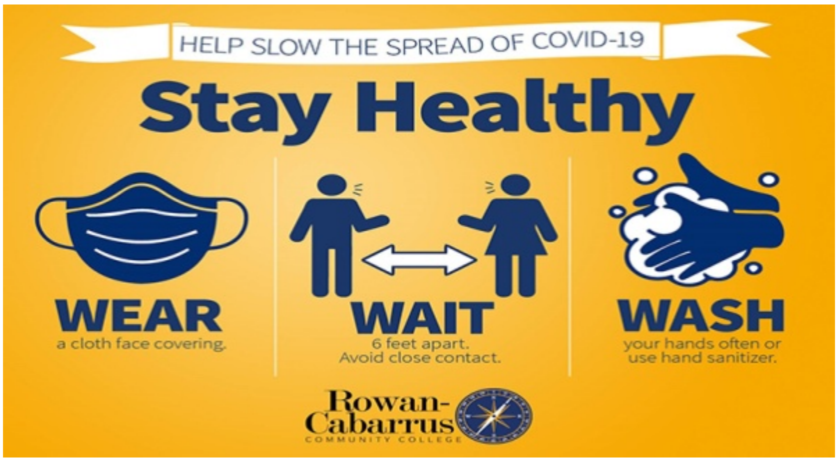


Fig. 1 Rowan Cabarrus Community College, NC, USA. Retrieved from <https://www.rccc.edu/coronavirus/>.

The poster is then subdivided into three parts forming a triptych with the use of a three-part list with alliteration, namely the repetition of the sound *W* at the beginning of three subsequent verbs, *WEAR*, *WAIT* and *WASH*, in capital letters, reproducing the emphasis that would be provided by a loud voice in oral speech. The three verbs in question are in a bold type font and represent the beginning of three verb phrases written in a smaller font which employ imperatives as recommendations and suggestions to keep safe: *WEAR a cloth face covering*, *WAIT 6 feet apart. Avoid close contact*, *WASH your hands often or use hand sanitizers*. The combination of two rhetorical features such as the tricolon with a repetitive sound pattern, which represent figures of presence according to Conley (1983), makes the message more memorable and persuasive. The imperatives, such as *HELP* and *Stay healthy* in the headline and slogan in the first part of the message and the others in the tricolon, aim to simultaneously give instructions and induce people to take some kind of action.

The same visual rhetorical strategy of a triptych is applied with the use of three imperatives in capital letters *WEAR*, *WAIT* and *WASH* in the poster in Fig. 2, by Fayetteville Police Department, NC, USA. Here, the three columns are introduced by an *if-clause: If you leave home, know your Ws!*, following the structure *if you X, then Y*, generally used in advertising to single out the right type of consumer or viewer. If you decide to leave home during the pandemic, you should know the three basic rules.

Fig. 2. Fayetteville Police Department, NC, USA. Retrieved from <https://nextdoor.com/agencypost/nc/fayetteville/fayetteville-police-department/if-you-leave-home-know-your-ws-148017799/>.

Similarly, the poster in Fig. 3 displays the imperative form *Remember the Three Ws!* with the use of three parallel directive constructions: *WEAR your face covering*, *WATCH your distance*, *WASH your hands*.

All these linguistic structures, the *if-clause* with the pronoun *you*, the possessive *your* and the imperatives in these posters, make direct appeals to the audience and can also be classified as engagement markers according to Hyland (2005a), who includes them among the interactional features of metadiscourse.

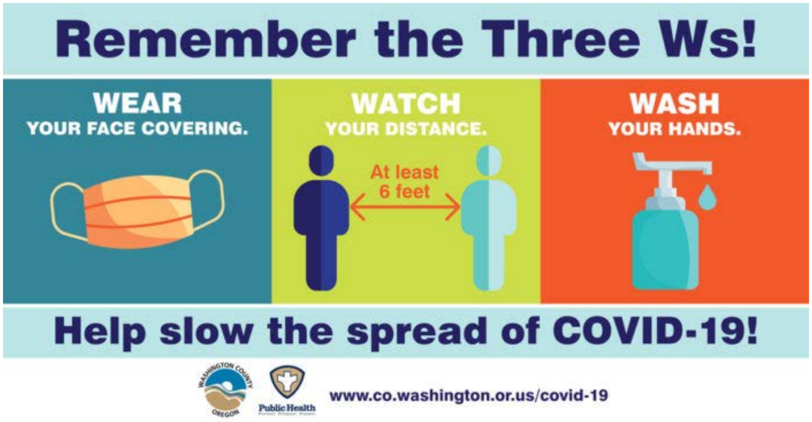


Fig. 3. Hillsboro Medical Center, OR, USA. Retrieved from <https://tuality.org/health/coronavirus/>.

The use of the second person pronoun *you*, the possessive *your* and of imperatives implies a higher degree of intimacy and familiarity in the context: “directly addressing the readers using second person pronouns (*you* and *your*) contributes to the interactive effect and narrows the distance between the writer and readers” (Liu/Zhang 2021). Furthermore, these pronouns provide an interlocutory effect implying a close and harmonious relationship with the readers. Additionally, imperatives or directives stimulate the readers’ participation in the text and instruct them to do something in a way suggested by the writer (Fu 2012). Besides, the iconic representations help the audience focus on the recommended actions.

Through the use of images, such as protective masks, hand sanitizers, human figures keeping distance, the posters’ producers focus on the actual themes at stake and allow the audience to concentrate on possible solutions and the right behaviours to adopt in order to avoid the spread of coronavirus. In these cases, images and texts are joined equally and reinforce one another, so their status is considered complementary (Martinec/Salway 2005). A whole image is related to a whole text and the image works as an expansion of the text itself. More precisely, according to Martinec/Salway (2005: 350) “when an image and a text are related by enhancement, one qualifies the other circumstantially”.

Fig. 4. Iowa Department of Public Health, IO, USA. Retrieved from <https://www.idph.iowa.gov/>.

In the posters in Fig. 4 (Iowa Department of Public Health) and Fig. 5 (Nebraska Association Local Health Directors), repetition creates musicality and stimulates memory. The two posters appear to be in contrast with each other because of the imperatives in the headers *Remember the three Cs* in the former and *Avoid the three Cs* in the latter. However, they do maintain the same purpose. In the poster in Fig. 4, the instructions provided through the use of verb phrase parallelism *Cover your cough*, *Clean your hands*, *Contain germs*, are further explained by other short imperative statements in a smaller font. The poster in Fig. 5 instead uses alliterative noun phrases to list what to avoid to stay safe and stop the spread: *crowded places*, *close contact* and *confined spaces*. After the header and the visual triptych and tricolon, the Nebraska poster provides further information using the same visual and textual format and strategies of repetition and reiteration through the use of catchy phrases with alliteration, directives, personal pronouns and possessives.

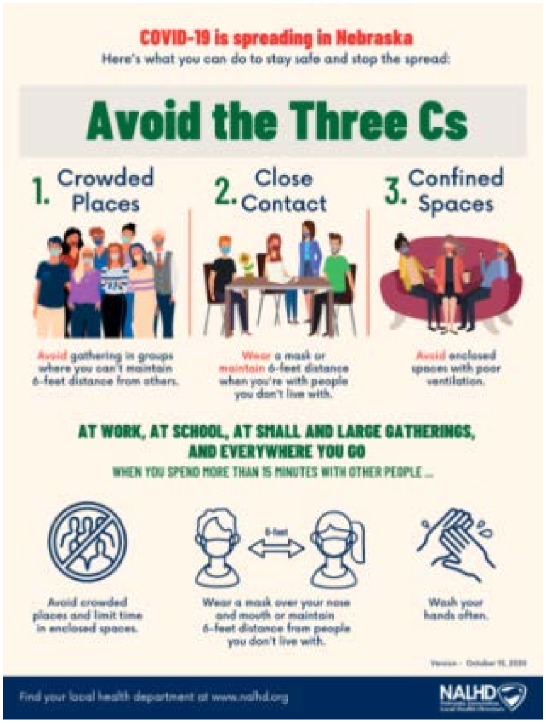


Fig. 5. Nebraska Association Local Health Directors, NB, USA. Retrieved from <https://www.idph.iowa.gov/>.

In the fact sheets in Fig. 6(a) and 6(b) produced by Scottish Canals, UK,[3] the tricolon *Stay home*, *stay safe and save lives* again reproduces the same pattern with directives and alliteration. The information provided is distributed on two pages: on the first one, the column layout is used with images and on the second one the text is organized in bulleted lists introduced by the imperatives *Be safe*, *Be smart*, *Be kind*.

---

3 Permission to reproduce the posters in Figures 6(a) and 6(b) was granted by media@scottishcanals.co.uk on 21/04/2021.

Bulleted lists in this case represent examples of what Hyland defines as elements of schematic text structure (2005a: 51) and includes them among the frame markers, which have the function to explicitly order arguments in the text making discourse clearer to readers. We argue that frame markers can be easily included among the figures of presence since they reinforce the content matter by making it more authoritative. As occurs in the other posters, colours here add to the emotional and affective impact of the message.

Fig. 6(a) and 6(b). Produced by Scottish Canals, UK. Retrieved from <www.scottishcanals.co.uk>.

Fig. 7 and Fig. 8 are posters which have been chosen as examples of what Conley calls figures of focus, such as similes, metaphors, slogans. They both intertextually combine visual metaphors with well-known slogans alluding to the fight against coronavirus. Fig. 7 displays fists wearing protective gloves hitting and beating the virus molecules with spikes. The slogan recites as follows: *We will beat this virus. We can* *do it*. Pastel colours in the poster reinforce the interactive character of the message expressing emotive 'temperature' as explained by Kress/Van Leeuwen (2002: 356). The scholars argue that "colour is also used to convey 'interpersonal' meaning. Just as language allows us to realize speech acts, so colour allows us to realize 'colour acts'" (2002: 348).

Fig 7. www.worksheetsplanet.com. Retrieved from <https://www.worksheetsplanet.com/wp-content/uploads/2020/11/Covid-Poster-for-Kids.jpg>.

Fig. 8. Help Appeal, www.helpappeal.org.uk. Retrieved from <www.countyairambulancetrust.co.uk>.

The poster in Fig. 8, by Help Appeal,[4] intertextually refers to the original wartime propaganda of Rosie the Riveter, produced by Howard

[4] Permission to reproduce the poster was provided by Mr. Robert W. Bertram FRSA, Chief Executive, County Air Ambulance Trust, P.O. Box 999, Walsall WS2 7YX, UK, on 21/04/2021.

Miller in 1943 during World War II to boost female workers' morale. It recalls the original colours of the layout, including the original headline and body copy *We can do it*! but places the emphasis on the visual metaphor which represents a female nurse wearing a mask, gloves, scarf and uniform, in the same iconic posture mimicking the strong, muscular and well-built factory worker in the original poster (Giordano/Marongiu 2021). Through the use of the slogans *We can do it* and *Proud to support the NHS* the poster invites the audience to unite in the common struggle and, similarly to the poster in Fig. 7, it represents a call to action against the common enemy.

In their work about discourses of the National Health Service during Brexit and the coronavirus pandemic, Antosa and Demata (2021) deal with the question of war metaphors used during the pandemic and argue that "the representation of Covid-19 as an enemy threatening to invade the nation communicates a sense of concreteness and personal involvement in the dangers coming from the pandemic, seen as an outside enemy, and is meant to strike a chord among those readers who feel a degree of emotional attachment to their own nation" (2021: 58). Figures of communion, among which Conley includes allusions and rhetorical questions, help form a common bond with the audience. Texts structured into questions in general directly appeal to and involve the audience, since they simulate a friendly dialogue.

The two posters in Fig. 9 and Fig. 10 appear to differ in the age of the intended audience: the first one is directed to children and this is shown by the vivid colour contrast used in the images and as background to the text. The questions asked are *How does it spread?* and *How can I protect myself?* followed by the answers highlighted in different colours. Fu argues that "[o]ne of the ways a writer can enhance the interactive quality of the text is by formulating questions which might be posed by an imaginary readership (2012: 402). Then, four columns follow with four images of a child with the major signs and symptoms of Covid-19 such as *fever*, *cough, sore throat* and *hard to breathe.*

The poster in Fig. 10 (Department of Health and Environmental Control, SC, USA) is clearly addressed to adults since it shows a more sober layout with softer colours and scientific and detailed information to answer more formal and precise questions such as *What is it?*, *How is it spread?*, *Who is at risk?*, *What are the symptoms?*, *How is it prevented?*. Each question is identified by a colour which is taken up by the corresponding answers and it is visually represented by a label and located in the layout of the poster so as to help the reader in the logical understanding of the information provided. Engaging markers such as questions are used to establish an informal and friendly atmosphere between the writer and the audience. Questions in particular are used to contribute to the development of the text and "play an important organizational role in unfolding the text" (Fu 2012: 409). In both posters in Fig. 9 and in Fig. 10, the text is structured and constructed with the reader's needs in mind, as explained by Hyland (2005: 49) when referring to the interactive dimension of metadiscourse.

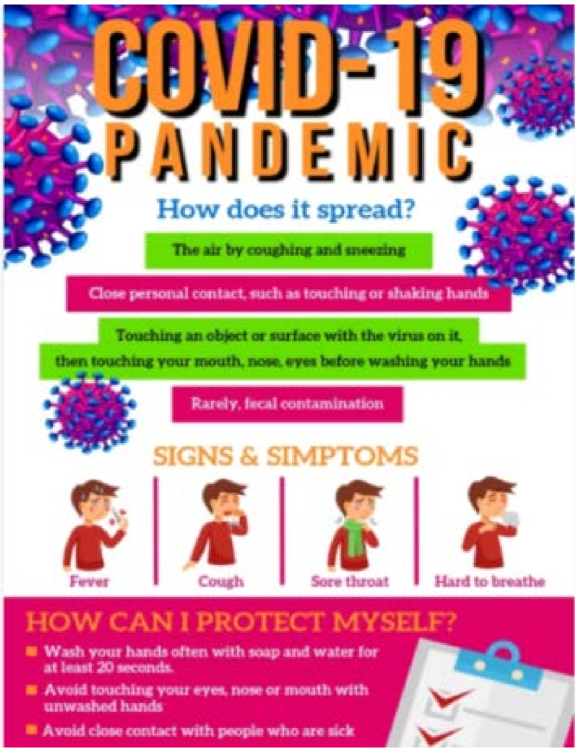


Fig. 9. From www.postermywall.com. Retrieved from <https://www.postermywall com/index.php/art/template/75b43aefbb62e35d3889cffa11ef33a7/covid-19-pandemic -poster-design-template#.YdsqeFko8hd>.

Fig. 10. Department of Health and Environmental Control, SC, USA. Retrieved from <scdhec.gov/COVID19>.

4.2. Ethos, pathos and logos

The previous paragraph has followed Conley's line of thought regarding the three types of figures, of presence, communion and focus, based on classical rhetoric. Very similarly, Hyland (2005) refers to the three classical appeals of *ethos*, *pathos* and *logos* and shows their relationship with metadiscourse strategies used in a text. This paper endeavours to demonstrate how the classical appeals and metadiscourse also combine in visual products in which images, graphs, tables and text intertwine to form persuasive, convincing and credible artefacts.

Ethos is the appeal that aims to convince an audience of the speaker or writer's moral weight and force, credibility and character, to show knowledge and expertise on the subject matter. Pathos is used to persuade an audience by appealing to their emotions, to inspire sympathy, instigate anger, elicit action through examples, stories and events. And finally, logos appeals to logic to persuade an audience through the use of reason, by citing details and statistics, historical facts and literal analogies, and by quoting authorities and experts on a subject.

It should be noted that all features found and analysed in the various posters under scrutiny satisfy the appeals of classical rhetoric (Hyland 2005a: 63-86) in modern and fresh forms of persuasive and convincing discourse, which well adapts to the different and often contrasting sentiments of the pandemic period in 2020 and 2021. Following Hyland, it can be said that the metadiscourse items identified have distinct rhetorical effects but, as can be seen from the examples provided, and as shown in the first part of the discussion, many of them simultaneously perform more than one rhetorical and metadiscursive function (Hyland 2005a: 84).

Fig. 11. Alliance Medical, UK. Retrieved from <https://www.alliancemedical.com/coronavirus>, <http://www.alliancemedical.co.uk>.

The poster in Fig. 11 by Alliance Medical presents what can be deemed as an example of ethical appeal inasmuch as ethos is used “to present a competent, trustworthy, authoritative and honest persona” (Hyland 2005a: 78). The metadiscoursal aspects which most contribute to the ethical appeal are boosters, engagement markers, self-mentions, attitude markers and evidentials.

This poster displays the use of the self-mention strategy through the personal pronoun *we* and the possessive *our* to refer to the Alliance Medical organization, producer of the poster. After the header *Your wellbeing matters*, which addresses the audience directly, the body copy introduces the activities of the medical organization and recites as follows: “*Our scanning centres remain open and the safety and wellbeing of all our patients and staf* [*sic*] *remains our highest priority. We are continuing to make sure that we have measures in place to maintain the highest level of safety and care for our staf* [*sic*], *patients and visitors*.” The possessive *our* and the pronoun *we* allude to the medical centre’s professional authority and position in the field: they can construct an identity of an accountable and reliable actor by making themselves the agents of the introductory body copy (Liu/Zhang 2021). Self-mention markers significantly help to “build a positive personal and corporate image” (Xiaoqin 2017: 236). Then, nine square boxes follow with information about the medical centre itself. The first one again introduces the various measures put in place to protect staff and patients: “*We have introduced additional measures to make sure that we keep both our patients and staf* [*sic*] *safe*” which again exhibits the same use of self-mention strategies. Self–mention expressions are collocated with words that indicate responsibility and commitment, such as *measures*, *sure*, *safe*: the use of these frames conveys the endeavours of the medical centre and constructs a determined, confident and positive company ethos (Hyland 1998b; Liu/Zhang 2021).

Superlatives such as *highest* and adjectives such as *additional*, *safe, sure*, *appropriate*, *all*, and adverbs such as *actively* account for the use of boosters and attitude markers through which this medical centre ensures measures of the *highest* quality and considers the wellbeing of patients its *highest priority*. According to Xiaoqin (2017: 237) “(b)oosters allow the writer to present a credible image of authority, decisiveness, and conviction”. The medical centre makes *sure* that they have *all* the measures in place in order to keep patients *safe*, such as the wearing of face masks, hand sanitizing stations, increasing times between patients, cleaning and decontamination, and screening for symptoms. *Appropriate* Personal Protective Equipment is worn at *all times.* Adjectives such as *appropriate* belong to the category of attitude markers which indicate the writer’s affective attitude to propositions conveying agreement and importance: writers express an evaluation, a position and “pull readers into a conspiracy of agreement so that it can often be difficult to dispute these judgements” (Hyland 2005b: 180). The use of commendatory or evaluative adjectives, in turn, reinforces the writer or speaker’s credibility and standing, contributing to the ethical character of discourse.

Attitude markers, self-mentions, engagement markers are the features used in the posters to empathize with the audience’s values and goals, to invite them to participate and respond, consider their attitude to the arguments and establish a relationship with them. Figures 12 from (a) to (f) show the Covid-19 campaign by www.canva.com. Word phrases such as *virtual hugs*, verb phrases such as *stand together* and *spread kindness* are significant to the audience personally and so the authors of the posters are addressing the audience’s situation directly, empathizing with their values and goals and directly inviting them to respond (Hyland 2005a: 81). Through the use of pastel colours and simple, almost childish drawings, this coronavirus poster campaign at once inspires simplicity and closeness by combining emotional words and rhyming phrases with vintage representations of the present reality such as people self-isolating in a tent, neighbours sharing baskets of sanitizers and vitamins, people hugging at a distance, the world transformed into a beating heart, and people sneezing into their sleeves to protect others. These illustrations evoke good sentiments such as intimacy, familiarity, closeness, kindness, solidarity, and collective coping against “the bugs”.

Fig. 12 (a), (b), (c). From www.canva.com. Retrieved from <https://www.canva.com/posters/templates/coronavirus/>.

Fig. 12 (d), (e), (f). From www.canva.com. Retrieved from <https://www.canva.com/posters/templates/coronavirus/>.

Childish rhyming language is used throughout the campaign to soften and mitigate the harsh reality: *Virtual hugs stop the bugs*, *Stop the spread, spread kindness instead*, *Don't wait, self isolate*, *Even though we are apart, you are in my heart*, *Stand together by not standing together*, *Cough and sneeze into your sleeve*, all of them sharing the same hashtag *#StopTheSpread*. Emotions such as social distance and togetherness at once appeal to the sense of community in the audience, by creating a common ground with the use of musicality and rhythm, through which affective appeals are channelled. As shown earlier in this paper, directives and engagement markers such as *you* are used for pathos and make the audience a discourse participant. "*Reader pronouns* are perhaps the most explicit way that readers are brought into a discourse. *You* and *your* are actually the clearest way a writer can acknowledge the reader's presence" (Hyland 2005b: 182).

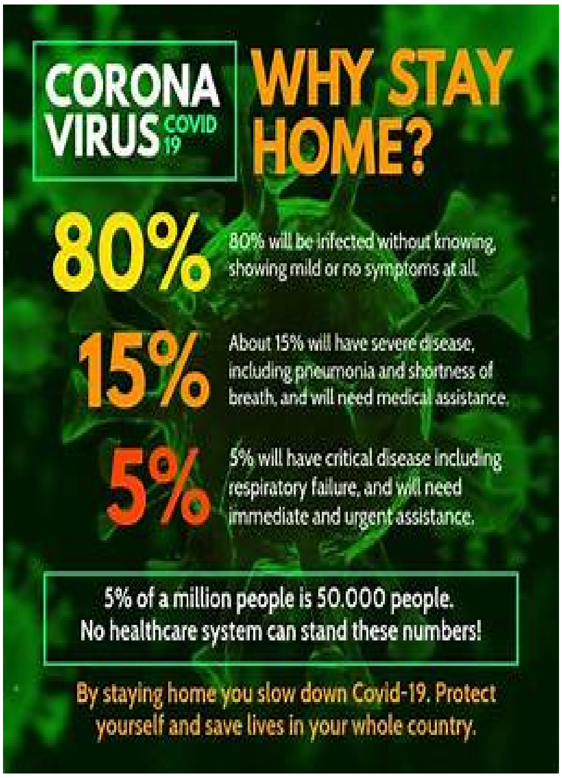


Fig. 13. From www.postermywall.com. Retrieved from <https://www.postermywall.com/index.php/art/template/6e7a5fed77a2dd82b434547235a96f8c/coronavirus-covid-19-stay-home-post-design-template#.YfLCMvgo8hc>.

The poster in Fig. 13 produced by the website postermywall.com has an interactive dark background underneath which the molecule of the coronavirus moves under the lens of a microscope. The text in the foreground, in sharp colours such as white, green, orange and yellow presents the object of interest through a rhetorical question *Why stay* *home*? The answers are provided through the use of percentages which introduce short explanations, such as *80% will be infected without knowing, showing mild or no symptoms at all*, or *5% will have critical disease including respiratory failure and will need immediate and urgent assistance*. Explanations are supported by precise statistics which appeal to reason. Percentages and numbers, along with transitions, by which the authors connect elements in the poster, explain, orient and guide the audience. The choices writers/authors make to define problems, support claims, validate premises and state conclusions are crucial to ensuring that an audience will accept an argument (Hyland 2005a). All the percentages shown and explained in detail seem to support and to justify the final statement which asserts that *5% of a million people is 50,000 people. No health care system can stand these numbers!* Therefore, the final statement concludes that *By staying home you slow down Covid-19*. The poster aims at convincing the audience of the logical and reasonable necessity to avoid contacts in order to control the spread of the virus with the objective of reducing hospitalizations and thus of easing the workload for the health care system.

Similarly to the poster in Fig. 13, the poster in Fig. 14, produced by Ear Hygiene Clinic, Ferrymead, Christchurch in New Zealand, presents scientific data on typical symptoms of Covid-19. The most important ones such as fever, dry cough and fatigue are represented through the use of small iconic images. Percentages are shown through a bar graph. The reliability of the data presented is reinforced by the caption on the lower right-hand corner, which refers to the source of the information provided, i.e. the WHO-China Joint Mission on Coronavirus Disease 2019, and to the lab research on 55924 cases dating back to February 20, 2020. By showing reliable and supported facts, the poster makes “it easier for the audience to process information and have a better understanding of authors’ intention” (Zhang/Chen 2020: 159).

Evidentials are the attribution to a reliable source. Hyland explains that in academic writing, this source “refers to a community-based literature and provides important support for arguments. Evidentials distinguish *who* is responsible for a position and while this may contribute to a persuasive goal, it needs to be distinguished from the writer’s stance towards the view, which is coded as an interpersonal feature" (2005a: 51-52). Fuertes-Olivera et al. add that "[e]videntials indicate a source of textual information which originates outside the current text. They establish intertextuality, thus helping copywriters to persuade consumers by associating their messages to other cultural artifacts" (2001: 1303).

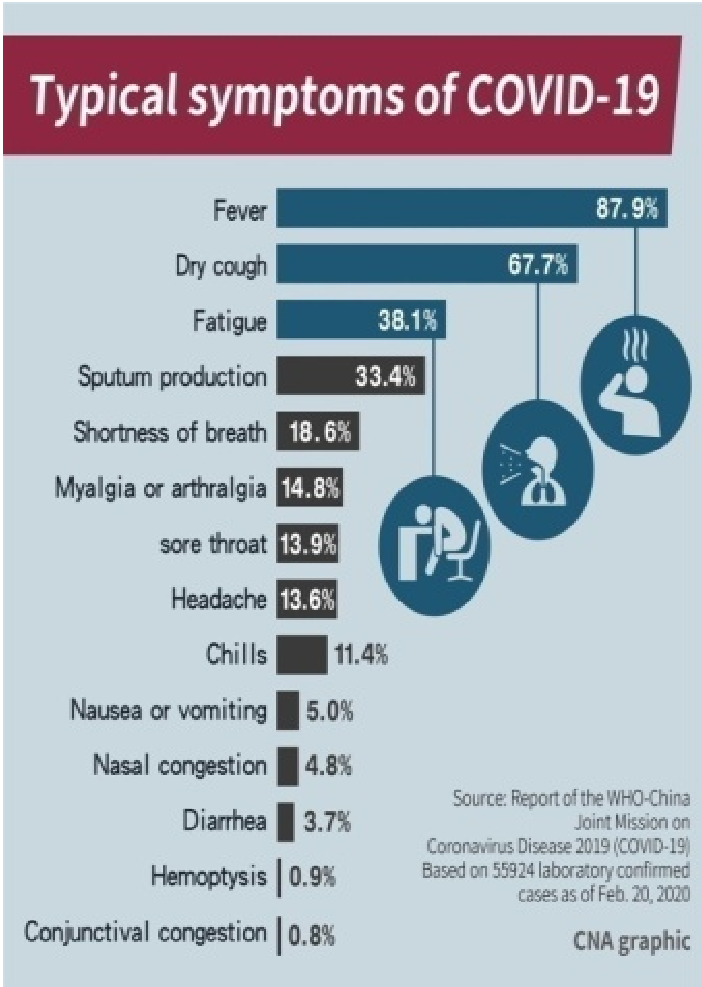


Fig. 14. Ear Hygiene Clinic, Ferrymead, Christchurch, New Zealand. Retrieved from <https://ear.net.nz/assets/Docs/COVID-19-Symptoms.jpg>.

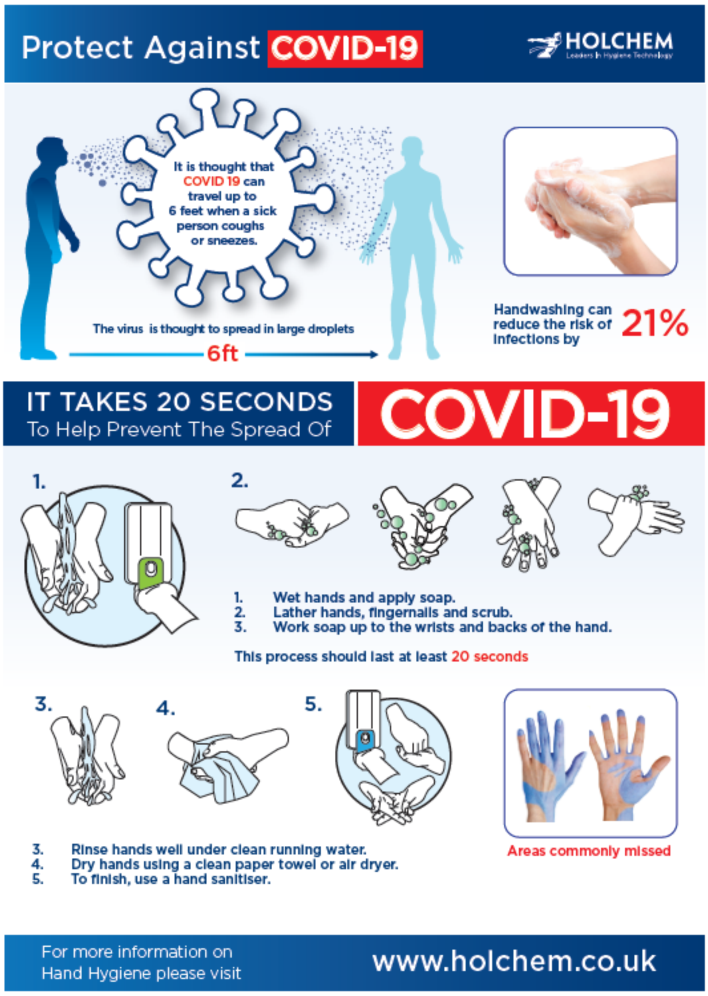


Fig. 15. www. holchem.co.uk. Retrieved from <www. holchem.co.uk>.

The poster in Fig. 15[5] by holchem.co.uk is divided into two major sections. The top part is headed by a dark blue and red band indicating

5 Fig. 15. Permission to reproduce the poster was granted by Ms. Diane Harrison, Customer Care Representative, Holchem Laboratories Ltd, Gateway House,

the poster's goal, which is *Protect Against Covid-19*. In the middle, we find a second band, this time introducing the instructions on how to protect against Covid-19 which recites *IT TAKES 20 SECONDS To Help Prevent The Spread Of COVID-19*. Both sections present a mix of text, numerical data, drawings and photographs, which ultimately make the information provided more realistic, and organised in a logical sequence of numbered statements. In the section above, the text reads as follows: *The virus is thought to spread in large droplets. It is thought that Covid-19 can travel up to 6 feet when a sick person coughs or sneezes. Handwashing can reduce the risk of infections by 21%.* The passive verb forms "is thought to" and the impersonal "It is thought that", and the modal verb *can*, are typical examples of hedges, which "emphasize the subjectivity of a position by allowing information to be presented as an opinion rather than a fact […]. Hedges therefore imply that a statement is based on the writer's plausible reasoning rather than certain knowledge, indicating the degree of confidence it is prudent to attribute to it" (Hyland 2005a: 52). The willingness to open to alternative voices, in this particular context, however, functions as a reinforcement to the own standing position. The stance of the poster's producer is implicitly and reasonably sustained and reinforced by the apparent mitigation due to the use of hedges such as the ones found in the text. The logical, scientific, and wise suggestions to reduce the risk of infection are all present in the statistics, in the figures, in the numbered hints on how to wash hands, and the corresponding descriptive images.

In general, numbers, figures, percentages, statistics along with explanatory text in these last two posters serve to clarify and guide the audience through specific and scientific communication. Therefore, comparing and sequencing of data are critical to the posters' overall persuasive force by providing reassuring, concrete, solid and reliable information.

Pilsworth Road, Pilsworth Industrial Estate, Bury, BL9 8RD, UK on 20/04/2021.

5. Conclusions

The study of 15 Covid-19 inspirational and educational posters and fact sheets, selected from a wider corpus, produced in English-speaking countries in 2020 and in the first months of 2021 has shown a very frequent use of stylistic features such as repetitions, alliterations, parallel constructions, rhyming patterns, intertextuality, reader-pronouns and self-mentions, attitude markers, hedges and boosters, all of which facilitate interpretation, understanding and retention, create positive associations, and ultimately, make information direct and effective. Immediacy of discourse is achieved through conditionals, imperatives or directives, questions, personal pronouns and engagement markers which make receivers potential participants in the interaction. Additionally, statistics and objective facts contribute to the precise and factual transmission of information, thus generating reliable and respectable communication.

The study illustrated how figures of presence, focus and communion are used, and how ethos, pathos and logos are achieved with interactive and interactional metadiscourse devices. They are all used strategically in order to impress upon and involve the audience. Discourse is more emotionally-loaded, objectives become clearer, more commonly shared and less ambiguous; the audience is directly involved so that poster producers' aims and intentions and consumers' expectations come together.

This study demonstrates that, as shown also by Hyland (2005a: 72) and Fuertes-Olivera et al. (2001), the best examples of the rhetorical role of metadiscourse are found in advertisements and slogans, where it is used to convey persuasive messages in the guise of an informative facade, and to create solidarity with observers, in order to secure both rhetorical and informative objectives.

References

Antosa, Silvia / Demata, Massimiliano 2021. Get Covid Done: Discourses on the National Health Service (NHS) during Brexit and the Coronavirus Pandemic, *Textus* 2, 47-65.

Conley, Thomas M. 1983. Personal Communication. University of Illinois, Urbana-Champaign. In Crismore, Avon 1989. *Talking with Readers. Metadiscourse as Rhetorical Act*, New York: Peter Lang.

Crismore, Avon 1989. *Talking with Readers. Metadiscourse as Rhetorical Act*. New York: Peter Lang.

Crismore, Thomas M. / Abdollehzadeh, Esmaeel 2010. A Review of Recent Metadiscourse Studies: The Iranian Context, *Nordic Journal of English Studies* 9/2, 195-219.

D'Angelo, Larissa 2018. Disciplinary Cultures in Academic Posters. A Textual and Visual Metadiscourse Analysis. *Lingue e Linguaggi* 28, 69-83.

Fu, Xiaoli 2012. The Use of Interactional Metadiscourse in Job Posters. *Discourse Studies* 14/4, 399-417.

Fuertes-Olivera, Pedro A. / Velasco-Sacristán, Marisol / Arribas-Baño, Ascensión / Samaniego Fernández, Eva 2001. Persuasion and Advertising English: Metadiscourse in Slogans and Headlines. *Journal of Pragmatics* 33, 1291-1307.

Gholami, Mehrnaz / Tajalli, Ghaffar / Shokrpour, Nasrin 2014. An Investigation of Metadiscourse Markers in English Medical Texts and their Persian Translation Based on Hyland's Model. *European Journal of English Language and Literature Studies*. 2/2, 1-41.

Giordano, Michela / Marongiu, Maria Antonietta 2021. Be a Hero! Cough like Batman: "Inescapable Intertextuality" in Covid-19 Ads, Cartoons, Memes and Songs. In Dongu, Maria Grazia / Fodde, Luisanna / Iuliano, Fiorenzo / Cao, Claudia (eds) *Intertextuality* Milano: FrancoAngeli, 201-221.

Hyland, Ken 1998a. *Hedging in Scientific Research Articles*. Amsterdam: John Benjamin.

Hyland, Ken 1998b. Exploring Corporate Rhetoric: Metadiscourse in the CEO's Letter. *Journal of Business Communication* 35/2, 224-244.

Hyland, Ken 2000. *Disciplinary Discourses: Social Interactions in Academic Writing*. London: Longman.

Hyland, Ken 2004. Disciplinary Interactions: Metadiscourse in L2 Postgraduate Writing. *Journal of Second Language Writing* 13, 133-151.

Hyland, Ken 2005a. *Metadiscourse. Exploring Interaction in Writing*. London: Bloomsbury.

Hyland, Ken 2005b. Stance and Engagement: A Model of Interaction in Academic Discourse. *Discourse Studies* 7/2, 173-192.

Hyland, Ken 2017. Metadiscourse: What is it and where is it Going? *Journal of Pragmatics* 113, 16-29.

Hyland, Ken / Tse, Polly 2004. Metadiscourse in Academic Writing: A Reappraisal. *Applied Linguistics* 25/2, 156-177.

Kress, Gunther / Van Leeuwen, Theo 1996. *Reading Images*. *The Grammar of Visual Design*. London: Routledge.

Kress, Gunther / Van Leeuwen, Theo 1998. Front Pages: (The Critical) Analysis of Newspaper Layout. In Bell, Allan / Garrett, Peter (eds) *Approaches to Media Discourse*, Oxford; Malden: Blackwell, 186-219.

Kress, Gunther / Van Leeuwen, Theo 2002. Colour as a Semiotic Mode: Notes for a Grammar of Colour. *Visual Communication* 1/3, 343-368.

Liu, Shuai / Zhang, Jingyuan 2021. Using Metadiscourse to Enhance Persuasiveness in Corporate Press Releases: A Corpus-Based Study. *SAGE Open* 11/3, 1-11.

Martinec, Radan / Salwei, Andrew 2005. A System for Image-Text Relations in New (and Old) Media. *Visual Communication* 4/3, 337-371.

Swales, John. 1990. *Genre Analysis: English in Academic and Research Settings.* Cambridge: Cambridge University Press.

Xiaoqin, Liu 2017. Exploring the Rhetorical Use of Interactional Metadiscourse: A Comparison of Letters to Shareholders of American and Chinese Financial Companies. *English Language Teaching*, 30/7, 232-241.

Vande Kopple, William J. 1985. Some Exploratory Discourse on Metadiscourse. *College Composition and Communication. National Council of Teachers of English* 36/1, 82-93.

Vande Kopple, William J. 2002. Metadiscourse, Discourse, and Issues in Composition and Rhetoric. In Barton, Ellen / Stygall, Gail (eds) *Discourse Studies in Composition*, Cresskill, NJ: Hampton Press, 91-113.

Zhang, Luyng / Chen, Yang 2020. Strategic Pro-environmental Persuasion: Use of Hedges in Chinese Environmental Commentary. *International Journal of Languages, Literature and Linguistics*, 6/3, 155-161.

STEFANIA CONSONNI

Cross-semiotic metadiscourse in science: Visual and verbal epistemicity in digital *vs*. analogue media

1. Introduction

This chapter examines visual-cum-verbal strategies for expressing epistemicity (i.e. extrinsic, propositional or speaker-oriented modality) in scientific discourse and the use thereof in two different media, namely, typically analogue resources such as research articles and newly established on-screen products, in particular digital synopses. The analysed domain is that of specialized medical communication, as one exemplarily involved in today's co-semiotization processes (Iedema 2001; Jakobson 1959; O' Halloran / E / Podlasov / Tan 2013; O' Halloran / Tan / Wignell 2016), whereby scientific knowledge, both new and pre-existing, is progressively being transferred by means of increasingly hybrid and propagative genres, made available by new information graphics technologies and the Web (Lorés 2021; Rebuske Hendges/Salete Florek 2019; Sancho-Guinda 2016, 2021).

Commonly referred to as the 'mode of knowledge', epistemicity codifies the speaker's opinion about the truth proposition of an utterance's ideational contents (Coates 1983; Greenbaum/Quirk 1990; Nuyts 2001; Palmer 2001). Grammatical and lexical resources are chosen from verbal language for their axiological connotations, in order to convey such concepts as the possibility (or lack thereof), high (or low) probability, necessity or certainty that specific scientific facts, or hypotheses, will occur in specific settings. However, the increasing weight conferred in recent decades to visuals and graphics in research articles, and even more so in digital synopses, with the aim of improving and accelerating the consumption, retention and circulation of complex contents, has brought about cross-semiotic inflections of epistemicity, based in fact on the semantic potential that hybrid constructs can deploy in multi-literacy contexts (Lemke 1998).

The purpose of this study is, firstly, to investigate how the interplay of different semiotics construes the truth status of scientific discourse, simultaneously encoding epistemicity from two different corners of the "scripto-visual pyramid" (Rowley-Jolivet 2002: 28), thus combining verbal (i.e. discontinuous, abstract, temporal) and visual (i.e. contiguous, sensorial, spatial) signs in the textualization of evidence-based knowledge. Secondly, since analogue and digital media deploy verbal and visual language in different proportions and with increasing hybridity, I will look into the epistemological impact that is produced by different versions of word-visual metadiscourse (Saint-Martin 1995; Iedema 2003). Being more radically visually oriented than on-page genres, as well as more linguistically oriented than traditional screen genres such as film and TV (Kress 2003, 2010), computer-mediated screen genres have in fact boosted the multimodal meaning-making potential of scientific communication, thereby showcasing the cognitive affordances brought about by incorporating visualization to verbal contents in specialized knowledge frameworks.

However, and more generally, is co-semiotization to be strictly interpreted as a one-way cultural drive towards the heuristic power of visualization? To deal with this question, I will consider those cases when – within and across discursive artefacts – meanings that may be coaxed into visual structures are also analytically re-encoded by way of linguistic representation. My working hypothesis is that co-semiotization may in fact work both ways, dependent on the specific communicative rationale of different genres with respect to different referential and pragmatic functions. To explore patterns of commonality and change across semiotic environments and media, and to examine how metadiscourse contributes to construe, validate and transfer the truth value of scientific discourse, is therefore the overarching aim of this chapter.

2. Materials

For the purpose of this analysis, I have collected a corpus of 40 open-access research articles and 40 matching digital synopses, published online from December 2017 to June 2018 in the *British Medical Journal* and covering a variety of clinical topics, from diagnostics to surgery, therapy and epidemiology.[1] As of late 2017, the journal has in fact started publishing contents in both formats, so that readers – that is to say, fellow physicians and health specialists – may choose between traditional IMRD scientific prose, i.e. the classical Introduction, Method, Results, Discussion argumentative sequence (Fig. 1 below), and synoptic infographic products (Fig. 2 below).

Designed for interactive full-screen consultation, much in the fashion of structured abstracts, digital synopses provide a ready-to-consult visual transmutation (Jakobson 1959) of a matching research article, thus working as both 'stand-alone mini-texts' (without readers having to read the whole paper), and potential cues to the quick indexing and retrieving of the full article itself (Huckin 2001).

As shown in Fig. 2 below, the typical synopsis in the BMJ corpus is connected to the matching full article by a hyperlink (at the bottom), and composed of several argumentative sections, generally replicating the IMRD structure, which display linguistic parts, as well as graphical items and icons. These sections share the same layout and are interrelated – both separated and linked – by vertical or horizontal blank (or coloured) spaces, bold lines, arrows, geometrical patterns, icons and symbols, etc., reproducing the logical connections and transitions that build the linguistic framework of the IMRD structure. A genre belonging to the universe of data visualization, that is to say, the structuring of empirical data into patterns that combine different sign systems such as words, symbols, icons and indexes (Benking 2005; Kiryuschchenko 2015), digital synopses use graphical representations that facilitate the identification and comparison of qualitative

[1] This will be henceforth referred to as the BMJ corpus.

information, such as processes and procedures, in terms of spatial relationships, networks, diagrams and hierarchies (Friendly 2009).

CLINICAL UPDATES

OPEN ACCESS

Diabetic foot

Satish Chandra Mishra,[1] Kunal C Chhatbar,[2] Aditi Kashikar,[3] Abha Mehndiratta[4]

[1]Department of Surgery, Bhabha Atomic Research Centre Hospital, Mumbai, India
[2]KEM Hospital, Mumbai, India
[3]Seth Gordhandas Sunderdas Medical College and King Edward Memorial Hospital, Mumbai, India
[4]Global Health and Development Group, Imperial College London, St Mary's Hospital, London, UK
Correspondence to: A Mehndiratta abha@mail.harvard.edu

Foot disease affects nearly 6% of people with diabetes[1] and includes infection, ulceration, or destruction of tissues of the foot.[2] It can impair patients' quality of life and affect social participation and livelihood.[3] Between 0.03% and 1.5% of patients with diabetic foot require an amputation.[4] Most ulcers can be prevented with good foot care and screening for risk factors for a foot at risk of complications.[5] We provide an update on the prevention and initial management of diabetic foot in primary care.

What causes diabetic foot?

Uncontrolled diabetes contributes to the development of neuropathy and peripheral arterial disease by complex metabolic pathways.[6] Loss of sensation caused by peripheral neuropathy, ischaemia due to peripheral arterial disease, or a combination of these may lead to foot ulcers. A systematic review (78 studies from 84 cohorts) reports a prevalence of 0.003-2.8% for diabetes related peripheral neuropathy and 0.01-0.4% for diabetes related peripheral arterial disease.[4] Figure 1 depicts factors that contribute to foot complications.

Diabetes is also implicated in Charcot arthropathy, which involves progressive destruction of the bones, joints, and soft tissues, most commonly in the ankle and foot. Diabetes related Charcot's arthropathy has a reported prevalence between 0.08% and 13%, but there are no high quality epidemiological studies on Charcot's foot.[7,8] A combination of neuropathy, abnormal loading of foot, repeated micro trauma, and metabolic abnormalities of bone leads to inflammation, causing osteolysis, fractures, dislocation, and deformities.[7]

WHAT YOU NEED TO KNOW

- Diabetic foot can be prevented with good glycaemic control, regular foot assessment, appropriate footwear, patient education, and early referral for pre-ulcerative lesions
- Examine the feet of people with diabetes for any lesions and screen for peripheral neuropathy and peripheral arterial disease, which can lead to injuries or ulceration
- Refer patients with foot ulceration and signs of infection, sepsis, or ischaemia immediately to a specialised diabetic foot centre for surgical care, revascularisation, and rehabilitation

Sources and selection criteria

This clinical update is based on recommendations in the standard treatment guideline, The diabetic foot: prevention and management in India 2016, published by the Indian Ministry of Health and Family Welfare.[11] A multidisciplinary guideline development group consisting of surgeons, primary care practitioners, and a patient representative developed these guidelines, with inputs from experts in diabetes, diabetic foot rehabilitation, and vascular surgery. The group included representation from rural and urban India, and public and private sectors.

The guideline development group selected recommendations from the National Institute for Health and Care Excellence clinical guideline 19. Diabetic foot problems: prevention and management. Updated 2016, International Working Group on the Diabetic Foot guidance on the prevention of foot ulcers in at-risk patients with diabetes 2015, National Institute for Health and Care Excellence. Peripheral arterial disease: diagnosis and management. Guideline 147, 2012, and Infectious Diseases Society of America clinical practice guideline for the diagnosis and treatment of diabetic foot infections, 2012.[9,10,11,12] Some recommendations were adopted unchanged, whereas others were adapted taking into account the challenges of a low resource setting, such as availability of public and private health infrastructure, equipment, staffing, and current capacity at different levels of care.

In low and middle income countries barefoot walking, lack of awareness, delay in seeking care, and shortage of trained healthcare providers and foot care services are common factors that add to the burden of foot disease.

How is it diagnosed?

A thorough foot examination is important to detect the disease early. Screening for peripheral neuropathy and peripheral arterial disease can help identify patients at risk of foot ulcers. A history of ulcers or amputations and poor glycaemic control increase the risk.

Assess the patient's general condition for signs of toxicity or sepsis such as feeling unwell, looking sick, showing abnormal behaviour, circulation, or respiration, with or without fever. Examine the feet at each follow-up visit for active disease such as ulceration or gangrene

HOW PATIENTS WERE INVOLVED IN THE CREATION OF THIS ARTICLE

No patients were involved in the creation of this article.

Fig. 1. Typical research article in the BMJ corpus (opening page). *Diabetic foot*. Retrieved from <www.bmj.com/ content/bmj/359/bmj.j5064.full.pdf>.

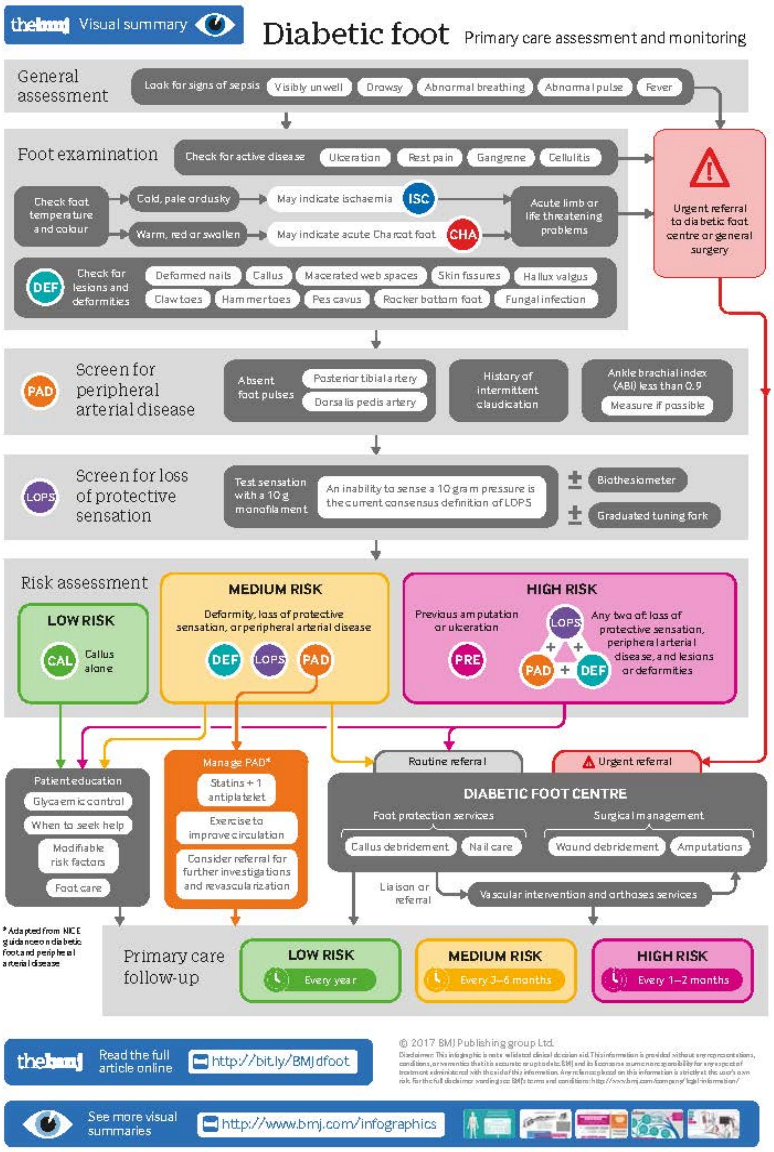


Fig. 2. Typical digital synopsis in the BMJ corpus. *Diabetic foot*. Retrieved from <www.bmj.com/content/bmj/suppl/2017/11/16/bmj.j5064.DC1/chas041916.ww1.pdf>.

The BMJ corpus comprises a total of 166,689 running words and 342 visuals, the distribution of which in the subcorpora is presented in Tab 1.

	Running words	*Visuals*
RESEARCH ARTICLES (40)	151,349 *(90.1%)*	37 *(10.8%)*
DIGITAL SYNOPSES (40)	15,340 *(9.9%)*	305 *(89.2%)*
TOT.	166,689	342

Tab. 1. Distribution of running words and visuals in the BMJ corpus.

3. Method

Within the framework of Systemic Functional Grammar (Halliday 2004), and incorporating metadiscourse studies, social semiotics and medical linguistics, this study contrasts verbal and visual expressions of epistemicity across two genres in scientific literature, with the purpose of outlining the different multi-literacy ways in which they are concerned with the epistemic status of the knowledge they convey. It is the interplay between verbal and visual epistemic resources that, in the BMJ corpus, defines a range of assumptions or assessments "that a certain hypothetical state of affairs under consideration (or some aspect of it) will occur, is occurring or has occurred in a possible world" (Nuyts 2001: 21), thereby encoding confidence (or lack thereof) in its adherence to accepted truth (Greenbaum/Quirk 1990: 66).

3.1. Verbal metadiscourse

Verbal epistemicity concerns the expression of the logical and representative status of facts or hypotheses, based on a specific (usually limited) framework of knowledge coordinates. Epistemic markers in the BMJ corpus have been identified on the basis of the following typology, comprising four modalizing orientations (Coates 1983; Palmer 2001), two of which are high modality (H), while two are low modality (L):

1) Possibility (L) conveys weak commitment to the truth status of a proposition, usually as the product of speculation or hypothesis; it is realized via modal verbs or auxiliaries such as *may*, *might*, *can*, *could*, *be supposed to*, etc., and lexical-modal expressions (*possibly*, *apparent*, etc.);
2) Probability (L) conveys flexible prediction or plausible inference, based on deduction from known data and realized via modal verbs, lexical-modal auxiliaries and semi-modals such as *should*, *ought to*, *be likely to*, etc., and lexical-modal expressions (*likelihood*, *probability*, *infer*, etc.);
3) Necessity (H) indicates solid conviction based on strong inference from accepted evidence and is realized via modal verbs and auxiliaries such as *must*, *need to*, etc., and lexical-modal items (*actually*, *indicate*, *show*, etc.);
4) Certainty (H) indicates strong assumption or prediction, albeit conveyed as diminished certainty compared to categorical assertions, and is realized via modal verbs and auxiliaries such as *will*, *shall*, *be due to*, *sure to*, etc., and lexical-modal items (*certain*, *truth*, *always*, etc.).

The four orientations may be placed along a spectrum of increasing epistemicity, from (L), typically signalling “limited knowledge, […] model, theory or method” or “experimental limitations” (Marta 2015: 568), to (H), emphasizing heuristic “involvement with the topic” (Hyland 2005: 53). As Fig. 3 shows, the typology falls within the two polarized functions of hedging and boosting.

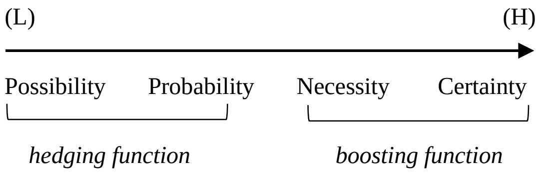


Fig. 3. Modalizing orientations: Low to high modality.

3.2. Visual metadiscourse

Within the social semiotics framework (Kress/Van Leeuwen 1996, 2001; Van Leeuwen 2005), epistemicity may be defined as an integrated system of visual deixis that provides an image of the metacognitive background shared by a particular cultural group. This study systematizes the following parameters for visual modality in polarized cues (High *vs*. Low modality), so that they can easily be identified and quantified in the BMJ corpus:

1) Representation, or articulation of detail: H (formal abstraction) *vs*. L (rendering of detail);
2) Contextualization, or articulation of background: H (no background) *vs*. L (detailed background);
3) Depth, or articulation of perspective: H (no depth) *vs*. L (perspective);
4) Colour saturation, modulation and differentiation: H (black/white, monochrome, flat colour) *vs*. L (colour saturation, colour palette, modulated colour);
5) Illumination: H (no shadow) *vs*. L (representation of light and shade).

Arranging themselves in various ways and proportions, these parameters can produce four coding orientations – namely, Sensory, Naturalistic, Abstract and Technological (Bernstein 1981). These orientations can be ranked in increasing degrees of epistemicity according to contexts and purposes, but such modality scale is not fixed, for markers are polypragmatic, so that different modal meanings may be expressed on the basis of the same visual markers. For instance, high epistemicity in technical drawing is usually based on low values of all markers (abstraction, no background, no perspective, monochrome or flat colour, no pictorial illumination); whereas in children's literature it typically entails articulation of detail, full background, articulated perspective, colour saturation, full colour palette, pictorial illumination.

For this reason, this study ranks the four coding orientations, from (L) to (H), on the basis of the scientific realism paradigm (Coopmans 2014; Kostelnick 1993; Latour 1987; Vertesi 2014). Scientific visuals, operating through the "filtering, uniforming, upgrading and defining" (Rowley-Jolivet 2002: 23) of phenomena, are high in modality when they follow the abstraction and decontextualization tendency of technical discourse, thus addressing discipline-specific questions such as "Can we measure the real dimensions from it?", "Can we find out from it how to set up the experiment?" (Kress/Van Leeuwen 1996: 170; see also Myers 1990). Based on this, the 342 visuals in the BMJ corpus have been scanned with respect to the following scale:

1) Sensory (L): based on sensory or emotional effects (i.e. the illusion of touch, taste and smell), this orientation has high values in all markers; it has high modality in promotional and persuasive contexts, but low modality in scientific discourse;
2) Naturalistic (L): this context-sensitive code depicts reality as would 'normally' be seen with the naked eye. Today's standard is mainstream photo-realism, producing high modality in journalism, advertising and art. Not so in purely scientific discourse: An X-ray or CAT scan image represents a specific case study, not a scientific law;
3) Abstract (H): visualizing phenomena in terms of general configurations, functions or 'truths', regardless of superficial details, abstraction represents laws, turning empirical observation into high-modality scientific generalization;
4) Technological (H): applying whenever visuals work as blueprint for the implementation of specialized procedures or protocols, this code provides guidance throughout complex operations. Turning observation into the ability to control empirical phenomena, it has high modality in scientific discourse.

The four coding orientations can be distributed along a spectrum of increasing epistemicity, which again falls within the polarized functions of hedging and boosting (Fig. 4). Pointing to generalization and objectivity, Abstract and Technological visuals have a boosting function; pointing to the material perception of individual differences, Sensory and Naturalistic visuals function instead as hedges.

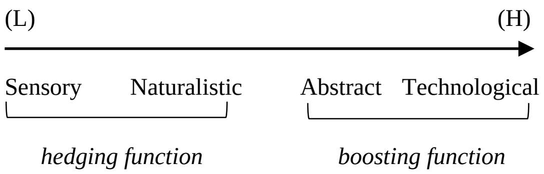


Fig. 4. Coding orientations: Low to high modality.

4. Results

As Tab. 1 above shows, verbal *vs*. visual metadiscourse is represented in the subcorpora in inverted proportions. Research articles, totalling 90.1% of running words, predictably use verbal language approximately ten times more frequently than digital synopses (151,349 *vs*. 15,340), while digital synopses employ nearly ten times more visuals (305 *vs*. 37). It is however worthwhile further contrasting the frequency and distribution of each verbal and visual marker within the two analysed media.

4.1. Verbal metadiscourse

Tabs. 2 and 3 detail the frequency and distribution of verbal markers within each subcorpus.

TOT. MARKERS (RESEARCH ARTICLES)	*Possibility (L)*	*Probability (L)*	*Necessity (H)*	*Certainty (H)*
90.5	*hedging function*		*boosting function*	
	57.6 *(63.7%)*	2.3 *(2.5%)*	13.2 *(14.6%)*	17.4 *(19.2%)*

Tab. 2. Verbal metadiscourse in research articles (normalized freq. per 10,000 words).

TOT. MARKERS (DIGITAL SYNOPSES)	*Possibility (L)*	*Probability (L)*	*Necessity (H)*	*Certainty (H)*
157.7	*hedging function*		*boosting function*	
	97.8 *(62%)*	54.8 *(34.8%)*	1.3 *(0.8%)*	3.9 *(2.4%)*

Tab. 3. Verbal metadiscourse in digital synopses (normalized freq. per 10,000 words).

Although both genres cover the same contents and follow the same macro-structure, it may immediately be noticed that digital synopses overall employ almost twice as many epistemic markers as traditional articles (157.7 *vs*. 90.5). This tendency to the on-screen verbalization of epistemicity may in fact be surprising for two reasons. On the one hand, as mentioned above, the word count ratio between digital and traditional media is 1:10. On the other, although digital synopses pivot on visualization and graphical language as an overarching semiotic mode, the newly established genre seems to rely on the verbal display of modalized meanings more than research articles, thus appearing to be explicitly concerned with the linguistic expression of assessments or assumptions with respect to the truth status of the information it provides. This tendency may be interpreted as a possible cross-semiotic strategy that scientific discourse has been developing in recent years, with a view to construing social and disciplinary legitimization for new and propagative media as reliable tools for knowledge transfer within the scientific community.

As concerns the distribution of the four modalizing orientations within the subcorpora, the most frequent mode – evenly represented in research articles and digital synopses (63.7% and 62% respectively) – is Possibility. Epistemic metadiscourse realized at the linguistic level, that is, shows a clear prevalence of low-modality meanings in both on-page and on-screen media, irrespective of their being traditional or innovative, or more or less oriented towards visualization or verbalization. This is not a startling occurrence: verbal language in scientific communication tends by tradition to deploy a hedging function, typically indicating the partiality or potential subjectivity of methodologies and results – a tendency that is the result of two salient historical facts of medical discourse.

On the one hand, hedging has been a standardized feature of specialized communication since the inception of experimental science in 17th-century Royal Society (Bazerman 1988), as a part of the rhetorical construction of credibility, from Robert Boyle's essays (Gotti 2003) to the current post-1978 IMRD format (Marta 2015). The accurate technical report of procedures and experiments, along with the presentation of hard empirical evidence, needed to be linguistically separated and purified from the individuality of conjectural speculation or ideological bias. Hedging is therefore embedded in the disciplinary evolution of scientific discourse, for acknowledging the limitations of one's method, results or interpretation has become a crystallized practice for the codification and validation of new knowledge claims, and for presenting them to the scientific community, so that they can eventually merge with the accepted scientific 'truth' (Knorr-Cetina 1999).

On the other hand, today's leading medical paradigm, Evidence-Based Practice (Greenhalgh 2010), is based on the strict self-assessment (and self-framing) of newly acquired experimental knowledge within a pyramidal hierarchy of methodologies, ranked in ascending levels of scientific rigour according to their reliability (i.e. containment of bias and neutralization of subjective factors). The epistemological function of linguistic hedging in research articles has thus been maximized as of the mid 1990s, that is, as Evidence-Based Practice internationally spread as the new top-standard healthcare framework (Sackett et al. 1996).

The much higher frequency of the two boosting orientations, Necessity and Certainty, in analogue media (14.6% and 19.2%) than in digital genres (0.8% and 2.4%) may also correlate with the particular epistemological accreditation of each medium. Overall, while hedging represents 96.8% of modalizing orientations in on-screen texts, it only represents 66.2% of the research article subcorpus, where 33.8% (that is to say, one marker out of three) perform instead a boosting function. This means that boosting is ten times more frequent – and perhaps epistemologically needed – in research articles than in digital synopses. Interestingly enough, boosting effects, especially the use of Necessity markers such as *indicate* and *show*, and Certainty markers such as *will*, *sure*, *ensure*, etc., are mainly used in research articles whenever solid evidence from top-ranking evidence-based experimental designs is presented, such as for instance definitive results from Randomized Controlled Trials (i.e. the golden-rule pinnacle of the pyramid of evidence; Greenhalgh 2010: 18-45). One example is provided below:

> However, data from a large multicentre study (2966 pregnancies, of which 56% of women had congenital heart disease, 32% valvular heart disease, and 7% cardiomyopathy) *showed* that pregnant women with heart disease are more likely to encounter episodes of arrhythmia (overall rate 2%).[2]

Coherently with their disciplinary collocation within the Evidence-Based hierarchy of knowledge advancement, conclusive experimental results tend to be metadiscursively framed in research articles as strong (or incontrovertible) inference from reliable data analysis.

But while the analogue IMRD structure directly reflects the probabilistic stance of 17th-century experimental proceedings, and may for this reason easily incorporate typically Evidence-Based boosting strategies,[3] digital synopses are a product of the growing visualization of culture (Fuery/Fuery 2005), i.e. a process rooted, as multimodal

2 Retrieved from <https://www.bmj.com/content/360/bmj.k478>.

3 Albeit as dispreferred strategies, when compared to the much higher frequency of hedging (66.2%).

analysis and social semiotics have shown (Kress/Van Leeuwen 1996, 2001; Van Leeuwen 2005), in lay communicative environments (such as advertising and other promotional/persuasive genres) much earlier (and to a much greater extent) than in specialized dissemination contexts. Although extremely propagative and more than potentially hegemonic, digital genres are therefore, and obviously so, a less consolidated transmission channel for scientific knowledge. Which may be among the reasons why, although the contents exposed are exactly the same as those in traditional articles, hedging may be perceived in digital communication as a more fruitful approach, in order for meanings and theories to be consulted, shared and assimilated by the scientific community.

4.2. Visual metadiscourse

The distribution and frequency of epistemic coding orientations is shown in Tabs. 4 and 5.

It may immediately be noticed that across media only a minority of visuals express low modality: hedging orientations cover 2% of the digital synopsis subcorpus and 40.5% of the research article subcorpus. While Sensory visuals are not attested at all,[4] the Naturalistic orientation is an interesting case, being twenty times more frequent in on-page than on-screen visuals.

TOT. VISUALS (RESEARCH ARTICLES)	*Sensory (L)*	*Naturalistic (L)*	*Abstract (H)*	*Technological (H)*
	hedging function		*boosting function*	
37	0 *(0%)*	15 *(40.5%)*	12 *(32.5%)*	10 *(27%)*

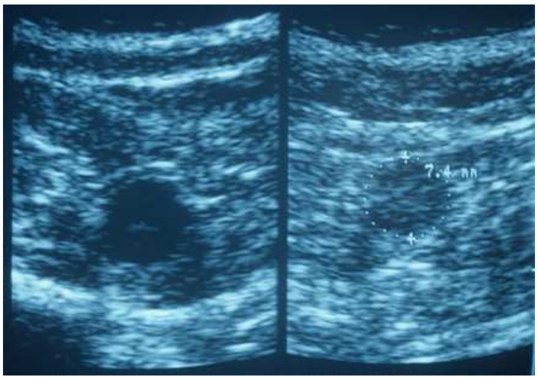
Tab. 4. Visual metadiscourse in research articles.

[4] For these are significant not in technical but in persuasive contexts.

TOT. VISUALS (DIGITAL SYNOPSES)	*Sensory (L)*	*Naturalistic (L)*	*Abstract (H)*	*Technological (H)*
305	*hedging function*		*boosting function*	
	0 *(0%)*	6 *(2%)*	112 *(36.7%)*	187 *(61.3%)*

Tab. 5. Visual metadiscourse in digital synopses.

Taken individually, although boosting orientations account for 59.5% of cases, Naturalistic is in fact the most frequent orientation in research articles.



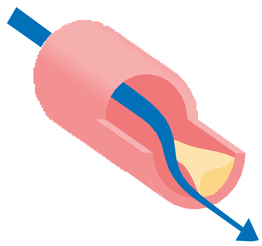


Fig. 5 (left). Typical Naturalistic visual (from the research article subcorpus): Deep vein thrombosis. Retrieved from <www. bmj.com/content/360/bmj.k351>.

Fig. 6 (right). Typical Abstract visual (from the digital synopsis subcorpus): Peripheral artery disease. Retrieved from <www.bmj.com/content/360/bmj.j5842>.

An example of a Naturalistic visual is provided in Fig. 5, showing an ultrasound picture of lower limb veins (a normal deep vein to the left, a thrombosed deep vein to the right). In scientific writing, Naturalistic visuals – photographs, X-rays, CAT scans, etc. – typically accompany the presentation of particular case studies, providing material evidence to the diagnosis or therapy suggested by the author. Although this type of perceptual evidence cannot be transferred to fellow doctors using words, for it has to be physically apprehended in order to be significant, Naturalistic visuals have but a low degree of epistemicity. In the context of knowledge dissemination, they are useful for illustrating individual situations (e.g. diagnostic pictures, damaged body parts, etc.), but not for visualizing general laws, as their eidetic potential is low. In other words, evidencing how experimental science stems from the observation of nature's potentially confusing variety, Naturalistic visuals tend to perform a hedging function.

Fig. 6 (above) depicts a similar referent to the one in Fig 5, but the orientation in this case is Abstract, as can immediately be seen from the correlation among the five parameters of visual epistemicity defined in 3.2 above. Here, the scientific tenability and generalizability conferred to the picture of a clogged artery is definitely higher. Providing raw perceptual data, still to be interpreted by the scientist, Naturalistic visuals pivot on their iconicity and potential polysemy (i.e. a complex referential load, pointing to the necessity of disambiguation on the part of the viewer), for they reproduce the unorganized complexity of 'real' phenomena. Abstract and Technological visuals are instead monosemic and eidetic (i.e. endowed with a one-way referential load, which requires no interpretation on the part of the viewer). Their stylised, high-modality conceptual outline extracts discipline-specific meanings from the natural world, the decoding of which rather calls for specialized knowledge frameworks that may guide viewers to see through the visual conventions used to process reality.

While Naturalistic visuals have the anecdotal function of supporting arguments with perceptual proof, Abstract (and Technological) visuals have an epistemological function, i.e. the reification of evidence via visual patterns (Lemke 1998). Empirical data are cleared from surface details, until the representation reaches a generalizable, always tenable and applicable status. Making reality "tractable for scientific investigation" (Coopmans 2014: 39), abstraction is especially used in the BMJ corpus in order to make particular systems of data – such as the clinical picture visualized in Fig. 5 above – quickly and systemically graspable by way of graphical language and spatial relations.

While Abstract visuals are fairly equally represented in on-page (32.5%) and on-screen media (36.7%), the Technological orientation is much more frequent in digital synopses than in research articles (61.3% *vs*. 27%). Fig. 8 shows a typical Technological visual. It is a decision tree, schematizing how a treatment plan for Parkinson's patients may be adjusted over time to take account of ongoing symptoms.

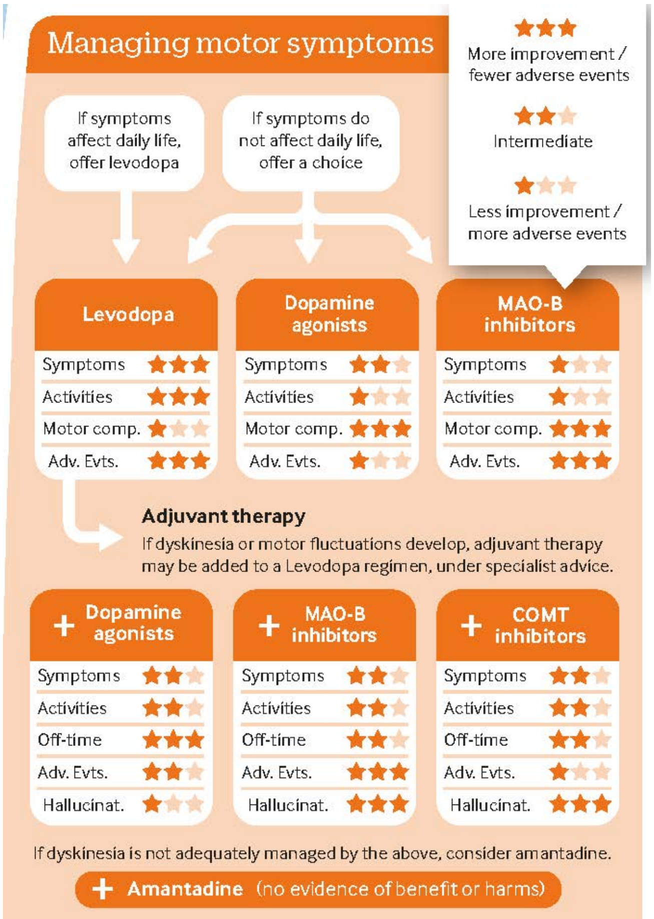


Fig. 8. Typical Technological visual (from the digital synopsis subcorpus): Parkinson's disease: Updated NICE guidance. Retrieved from <www.bmj.com/content/bmj/suppl/2018/02/01/bmj.j5842.DC1/morr041877.wi.pdf>.

The positive or negative impact of medicines on patients is graphically condensed by way of a star-rating system (the key to which is in the white box at the top right of the picture), and cause-effect relationships between actions are rendered through arrows and + signs. Technological visuals, that is, allow articulated, multi-variable data systems – not simple configurations of elements, but dynamic sequences, procedures or protocols – to be further abstracted, by way of graphical patterns and symbolic icons which enable the viewer to synoptically gain knowledge not just about the physiology of the process being schematized, but also about how to manage or control it. This boosts the expressed commitment of scientific discourse to the objectivity, factuality and reliability of its contents.

For this reason, Technological visuals may be said to provide science with "its most powerful tool: the visual display" (Latour 1987: 67). As will be argued in the Discussion section of this paper, this seems to suggest a possibly increasingly persuasive function performed by medical discourse, in particular by newly established on-screen genres. As "theory-laden" constructs (Vertesi 2014: 21), covering 61.3% of orientations, Technological visuals appear in the BMJ corpus as a prerogative of on-screen communication. This is not the case with research articles, in which they only appear in 27% of cases. Again, this is an unsurprising fact. In traditional IMRD prose, which does not obey the same space constraints as full-screen synopses – for readers may browse (or scroll, in the case of PDF) documents at will –, complex protocols are conveyed at length through verbal argumentation. In the research article matching the synopsis from which Fig. 8 was extracted, the procedures composing the treatment plan are fully resemiotized. Thus, the graphical arrangement of orange and white tags, the rows of stars and arrows simultaneously appearing in the synopsis is alternatively codified in the following string of words:

> Oral levodopa remains the preferred first line medicine for people with troublesome motor symptoms. When starting treatment, give information about adverse events. For dopamine therapy, these adverse events may include impulse control disorders (particularly dopamine agonists), excessive sleepiness, and hallucinations and delusions (all Parkinson's disease treatments but particularly dopamine agonists). […]

> When a person with Parkinson's disease develops dyskinesia or motor fluctuations (including 'wearing off' episodes when effects of medication start to wear off in between medication doses) adjuvant therapy may be added, on advice from a healthcare professional with specialist expertise in Parkinson's disease. [5]

The temporal and logical relationships between symptoms and medicines, which the synopsis schematizes by way of a flow diagram enriched with icons (i.e. stars), directional vectors (i.e. arrows) and mathematical symbols (i.e. the + sign), are here configured and textualized using linguistic transitions. For instance, the white arrow connecting "adjuvant therapy" to the "Levodopa" orange tag in Fig. 8 codifies the same temporal meaning as the subordinate sentence "*when* a person with Parkinson's disease develops dyskinesia or motor fluctuations"; the + sign appearing next to "Dopamine agonists", "MAO-B inhibitors" and "COMT inhibitors" visualizes what the article lexicalizes (in this case, with added deontic meaning) as "adjuvant therapy *may be added*".

While on-screen communication seems to entrust the eidetic potential of Abstract and Technological visuals with the task of boosting science's power to construct the visible, thus using visualization to maximize the epistemological discernibility of the investigated phenomena (Rowley-Jolivet 2002; Lemke 1998;), in the case of analogue media verbal metadiscourse remains the preferred option for expressing confidence in the truth proposition of scientific contents, as the high frequency of Necessity (14.6%) and Certainty markers (19.2%) indicates. Albeit with complementary cross-semiotic styles, both research articles and digital synopses seem however to have developed a growingly persuasive function, hybridising over time the informative and referential mission of specialized communication, which was the heritage of modern Empiricism, with more explicitly promotional and interactional functions.

[5] Retrieved from <https://www.bmj.com/content/358/bmj.j1951>.

5. Discussion and conclusions

Results hitherto suggest that the metadiscoursal codification of epistemicity in the BMJ corpus relies upon various strategies of cross-semiotic collaboration between the verbal and the visual mode, as well as upon different combinations of hedging and boosting effects. In both genres, the multi-literacy construction of epistemicity seems to serve the pragmatic purpose of adding an interactional (eminently persuasive) function to the referential and informative load of scientific discourse, so as to favour the interest and receptivity of the scientific community. This contributes to promote the validation, legitimization and dissemination of medical discourse, favouring the transfer of knowledge into the common stock of formulations of the current epistemic culture. Cross-semiotic epistemicity, whereby the truth status of discourse is a result of the synchronous functional-semantic cooperation (or co-semiotization) of the scriptural and the graphical mode, has for this reason become an increasingly prevalent feature of scientific discourse, one that is associated with the disciplinary matrix of science itself (Bazerman 1988; Lemke 1998; Myers 1990).

The BMJ corpus also evidences that different dissemination media work on different degrees of word-visual combination. In digital communication, verbalization and visualization carry out opposite operations: while the scriptural code construes the credibility and facticity of scientific discourse by way of hedging (96.8%), visual language encodes the same meanings through boosting orientations (98%). Cross-semiotic boundaries appear a little less sharp in on-page communication, where visualization performs a broadly boosting function (59.5%) and verbalization mainly a hedging one (66.2%). In both analysed media, however, epistemicity is conveyed through the hybridization of the discontinuous sequencing of abstract and temporal signs, which forms verbal language, with the contiguous synchronicity of sensorial and spatial signs, which form visualization.

It is the degree of alignment of the two semiotic systems that carries out the metadiscoursal labour of expressing the discourse’s epistemic status. But the proportion in which this hybridization occurs is determined by different communicative purposes and pragmatic contexts. As the comparison between Fig. 8 and its linguistic transmutation has shown, when dealing with particularly complex sequences of data (such as the therapeutic plan for Parkinson's disease analysed in section 4.2 above), medical discourse may employ different co-semiotization solutions: analogue genres privilege verbalization and the linearity of causal-temporal progression, while on-screen genres adopt the synoptic and instantaneous visualization shown in Fig. 8. The interesting countertrend shown by on-page hedging Naturalistic visuals (40.5%) and boosting Necessity-Certainty markers (33.8%), balancing the low frequency of Technological visuals (27%), as well as the propensity of on-screen discourse to the verbalization of (especially low) epistemicity, may however indicate that metadiscoursal co-semiotization processes are perhaps more complex than today's verbal-to-visual momentum seems to suggests (O' Halloran / Tan / Wignell 2016; Tufte 2001).

The heuristic power of visualization, and today's undeniable drive towards visual culture, may indeed not be the one and only key to contemporary science's multi-literacy practices. From a cognitive standpoint, the BMJ corpus suggests that both the verbal and the visual mode are mutually mobilized towards one another, for the strategies it displays seem to stem from the representative affordances and constraints of both semiotics. On the one hand, when organising the description of phenomena in synoptical, indexical or topographical fashion (Benking 2005), science tends to use the spatial facilitation offered by graphic visualization – which in certain contexts, such as on-screen communication, may trigger the immediate grasping of data sets more easily than the temporality of the scriptural medium would allow (Lorés 2021; Rebuske Hendges/Salete Florek 2019; Sancho-Guinda 2016, 2021). On the other hand, in its linear and irreversible sequencing of discrete signs, verbal language offers the advantage of formulating complex configurations of meaning, such as introducing details or distinctions and typologizing categories, as is testified by various typical features of written scientific language (e.g. the use of extended noun phrases, pre- and post-modifying prepositional phrases, etc.), whose function is linked to the legitimization of its informative and instructional value.

In addition, considering the hermeneutics of verbal and visual communication, it is worthwhile noticing that – despite the immediate and synchronous intelligibility of the spatial configurations and systemic relations that are offered by visualization – reading visuals, as much as reading words, entails not just construing meanings from what we see or read, but also from what we know (Kostelnick 1993). Conversely, when dealing with verbal language, readers may resort to a variety of visualization strategies – for instance, those favouring the topicalization and organisation of linguistic contents, either prospectively (e.g. typographical conventions, the IMRD structure itself) or retrospectively (e.g. cognitive maps). The two semiotics, in other words, are equally cognitive in nature, and complementary in interpretation. Their interplay may, for these reasons, allow for functional and communicative developments of scientific discourse that – especially at a metadiscoursal level – significantly increase those instantiated by one resource alone.

It should finally be noticed that among the most relevant consequences of verbal-cum-visual semiotization is the constant rematerialization of scientific discourse in today's evolving mediascape, which contributes to its progressive reification and propagation – both increasingly widespread and increasingly capillary – within epistemic ideologies (Knorr-Cetina 1999). As knowledge is transferred across shifting semiotic systems, new and hybrid epistemic practices are progressively elaborated, in order to promote it across ever more propagative semiotic modes (Iedema 2001; Lorés 2021; Rebuske Hendges/Salete Florek 2019; Sancho-Guinda 2016, 2021). This reinforces the construction of science's prestige, i.e. its relevance and authority within the ideological environment producing it. From 17th-century Royal Society experimental reports to post-1978 IMRD research articles, academic posters (D'Angelo 2016), and the recent codification of digital synopses, scientific discourse has in other words produced increasingly ever more persuasive and powerful categorizations of empirical reality, in which – as the BMJ corpus shows – the cross-semiotic construction of metadiscourse plays a significant role.

References

Bazerman, Charles 1988. *Shaping Written Knowledge. The Genre and Activity of the Experimental Article in Science*. Wisconsin: University of Wisconsin Press.

Benking, Heiner 2020. Using Maps and Models, Supersigns and Superstructures. Retrieved from <http://benking.de/systems/codata/CODATA-MIST2005.htm>.

Bernstein, Basil 1981. Codes, Modalities and the Process of Cultural Reproduction: A Model, *Language and Society* 10, 327-363.

Coates, Jennifer 1983. *The Semantics of Modal Auxiliaries*. London: Croom Helm.

Coopmans, Catelijne 2014. Visual Analytics as Artful Revelation. In Coopmans, Catelijne / Vertesi, Janet / Lynch, Michael E. / Woolgar, Steve (eds) *Representation in Scientific Practice Revisited*. Cambridge, MA: MIT Press, 37-59.

D'Angelo, Larissa 2016. *Academic Posters. A Textual and Visual Metadiscourse Analysis*. Bern: Peter Lang.

Friendly, Michael 2009. Milestones in the History of Thematic Cartography, Statistical Graphics, and Data Visualization. Retrieved from <http://www.datavis.ca/papers/gfkl.pdf>.

Fuery, Patrick / Fuery, Kelli 2003. *Visual Cultures and Critical Theory*. London: Hodder Arnold.

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

Greenbaum, Sidney / Quirk, Randolph 1990. *A Student's Grammar of the English Language*. Harlow: Longman.

Greenhalgh, Tricia. 2010. *How to Read a Paper. The Basics of Evidence Based Medicine*. Oxford: Wiley / Blackwell.

Halliday, Michael A.K. [3]2004. *An Introduction to Functional Grammar*. London: Hodder Arnold.

Huckin, Thomas N. 2001. Abstracting from Abstracts. In Hewings, Martin (ed) *Academic Writing in Context: Implications and*

Applications. Birmingham: University of Birmingham Press, 93-103.

Hyland, Ken 2005. *Metadiscourse. Exploring Interaction in Writing*. London: Continuum.

Iedema, Rick 2001. Resemiotization. *Semiotica*, 137/1-4, 23-39.

Iedema, Rick 2003. Multimodality, Resemiotization: Extending the Analysis of Discourse as Multi-Semiotic Practice. *Visual Communication* 2/1, 29-57.

Jakobson, Roman 1959. On Linguistic Aspects of Translation. In Brower, Reuben A. (ed) *On Translation*. Cambridge: Harvard University Press, 232-239.

Kiryushchenko, Vitaly 2016. Maps, Diagrams, and Signs: Visual Experience in Peirce’s Semiotics. In Trifonas, Peter (ed) *International Handbook of Semiotics*. Dordrecht: Springer, 115-123.

Knorr-Cetina, Karin 1999. *Epistemic Cultures. How the Sciences Make Knowledge*. Cambridge: Harvard University Press.

Kostelnick, Charles 1993. Viewing Functional Pictures in Context. In Blyler, Nancy R. / Thralls, Charlotte (eds) *Professional Communication: The Social Perspective*. London: Sage, 243-256.

Kress, Gunther 2003. *Literacy in the New Media Age*. London: Routledge.

Kress, Gunther 2010. *Multimodality. A Social Semiotic Approach to Contemporary Communication*. London: Routledge.

Kress, Gunther / van Leeuwen, Theo 1996. *Reading Images. The Grammar of Visual Design*. London: Routledge.

Kress, Gunther / van Leeuwen, Theo 2001. *Multimodal discourse. The modes and media of contemporary communication*. London: Hodder Arnold.

Latour, Bruno 1987. *Science in Action*. Cambridge, MA: Cambridge University Press.

Lemke, Jay 1998. Multiplying Meaning: Visual and Verbal Semiotics in Scientific Texts. In Martin, J.R. / Veel, Robert (eds) *Reading Science*. London: Routledge, 87-113.

Lorés, Rosa 2021. From Print Form to Digital Communication: The One-Way Journey of Academic Research. *Discourses on Culture* 15, 45-65.

Marta, Monica M. 2015. A Brief History of the Evolution of the Medical Research Article. *Clujul Medical* 88/4, 567-570.

Myers, Greg 1990. *Writing Biology. Texts in the Social Construction of Scientific Knowledge*. Madison: University of Wisconsin Press.

Nuyts, Jan 2001. *Epistemic Modality, Language, and Conceptualization. A Cognitive-Pragmatic Perspective*. Amsterdam: John Benjamins.

O'Halloran, Kay L. / E, Marissa K.L. / Podlasov, Alexey / Tan, Sabine 2013. Multimodal Semiotics: The Interaction of Language with Other Resources, *Text & Talk* 33/4-5, 665-690.

O'Halloran, Kay L. / Tan, Sabine / Wignell, Peter 2016. Intersemiotic Translation as Resemiotization: A Multimodal Perspective, *Signata* 7, 199-229.

Palmer, Frank R. 2001. *Mood and Modality*. Cambridge: Cambridge University Press.

Rabuske Hendges, Graciela / Salete Florek, Cristiane 2019. The Graphical Abstract as a New Genre in the Promotion of Science. In Luzón, María José / Pérez-Llantada, Carmen (eds) *Science Communication on the Internet: Old Genres Meet New Genres*. Amsterdam: John Benjamins, 59-79

Rowley-Jolivet, Elizabeth 2002. Visual Discourse in Scientific Conference Papers: A Genre-Based Study. *English for Specific Purposes* 21/1, 19-40.

Sackett, David L. / Rosenberg, William M.C. / Muir Gray, J.R. / Haynes, R. Brian / Richardson, W. Scott 1996. Evidence Based Medicine: What It Is and What It Isn't. *British Medical Journal* 312, 71-72.

Saint-Martin, Fernande 1995. Visual and Verbal Semantics. In Sebeok, Thomas A. / Umiker-Sebeok, Jean (eds) *Advances in Visual Semiotics: The Semiotic Web 1992-93*. Berlin: de Gruyter, 375-401.

Sancho Guinda, Carmen (2016). Semiotic Shortcuts: The Graphical Abstract Strategies of Engineering Students. *Hermes* 55, 61-90.

Sancho Guinda, Carmen (2021). This Has Changed: 'Out-of-the-Box' Scientific Metadiscourse in Graphical Abstracts. In D'Angelo, Larissa / Mauranen, Anna / Maci, Stefania (eds) *Metadiscourse in Digital Communication: New Research, Approaches and Methodologies*. Cham: Palgrave Macmillan, 81-114.

Tufte, Edward R. 2001. *The Visual Display of Quantitative Information*. Cheshire: Graphics Press.

van Leeuwen, Theo 2005. *Introducing Social Semiotics*. London: Routledge.

Vertesi, Janet 2014. Drawing as Distinctions and Disambiguation in Digital Images of Mars. In Coopmans, Catelijne / Vertesi, Janet / Lynch, Michael E. / Woolgar, Steve (eds) *Representation in Scientific Practice Revisited*. Cambridge, MA: MIT Press, 15-35.

CARMEN SANCHO GUINDA

From free rhetoric to the tripartite model: Metadiscourse trends in graphical abstracts

1. The challenges of scientific iconography: Metadiscourse in focus

Pictorial information has been used to build and disseminate knowledge since time immemorial and with a whole host of purposes. As Dwyer (1978) points out, through visual representations humankind has illustrated concepts, verified research, solved problems, clarified ideas, assisted theory development, served as a source for comparison and contrast, corrected misconceptions, and summarised topics. This chapter will precisely explore the encapsulating function of a recent scholarly genre, the graphical abstract (hereafter GA), every day more demanded by specialised high-impact journals across disciplines and at present undergoing severe changes imposed by the guidelines of one of its editorial pioneers, the multinational publisher Elsevier. Leaning on the analyses of discourse and multimodality, I will pay special attention to the evolution of GA metadiscourse through this publishing house's policy and to its possible repercussions on the genre's format and content comprehension.

Visuals are not to be considered "mere additions", as Pauwels (2006) cautions, but "an essential part" of scientific discourse, being science itself, in words of Bruno Latour (1990), "a largely symbolic enterprise". Such symbolism, nonetheless, is not free from challenges: to begin with, visual representations usually function as *"one way communication"* (Trumbo 2006), because what the audience receives does not provide for a response and there is no dialogue about the visual decisions taken. Very seldom do scholars justify why they have chosen a photograph, a drawing, a diagram, a symbolic notation or a computer visualisation from among the graphic repertoires technically affordable and available today. Neither do they argue for their choices of perspective and orientation, or for the reference to, say, a molecule, by its verbal label (e.g. methane), its formula (CH_4), its bi-dimensional or tri-dimensional models, or its dynamic relationship with other molecules and elements in chemical reactions. Experts keep all those decisions to themselves.

Secondly, visual language is holistic, open, amalgamated, synthetic and dynamic (Barry 1997), and therefore *cannot establish a one-to-one correspondence with verbal language*, which is by definition linear and logically structured. Simply put, there cannot be a real ‘visual grammar’, despite Kress and van Leeuwen’s (1996) and Leborg’s (2004) attempts, a limitation that Machin (2007) readily underscores in his *Introduction to Multimodal Analysis.* Thirdly and stemming from the former, if the goal of any instance of visual communication is to enable the viewer to understand and remember its content (Lester 1995), then scientific iconography must be, as Tufte (1997: 73) notes, “clear, assured, reliable, and sturdy”, but it is not always so, because not every scholar possesses the *visual literacy* required. That is the reason why Pauwels (2006: 24) reminds us that although visuals are supposed to enlighten and broaden our understanding, “at the same time they will obscure it”.

A fourth challenge is to transform the discoveries, findings, research outcomes or data into a *visual narrative.* Visual representations are static (Leborg 2004: 39) and what we perceive as action is a static sequence that creates an illusion of activity with compositional strategies and visual metadiscursive resources. However, scientific knowledge is not static and it gets transformed when turned into a narrative, which acts in turn as a ‘knowledge carrier’ (Ogborn et al. 1996: 14-15). Consequently, those illusions of movement mentioned by Leborg must be powerful and efficacious. Once again we stumble upon the problem of visual literacy.

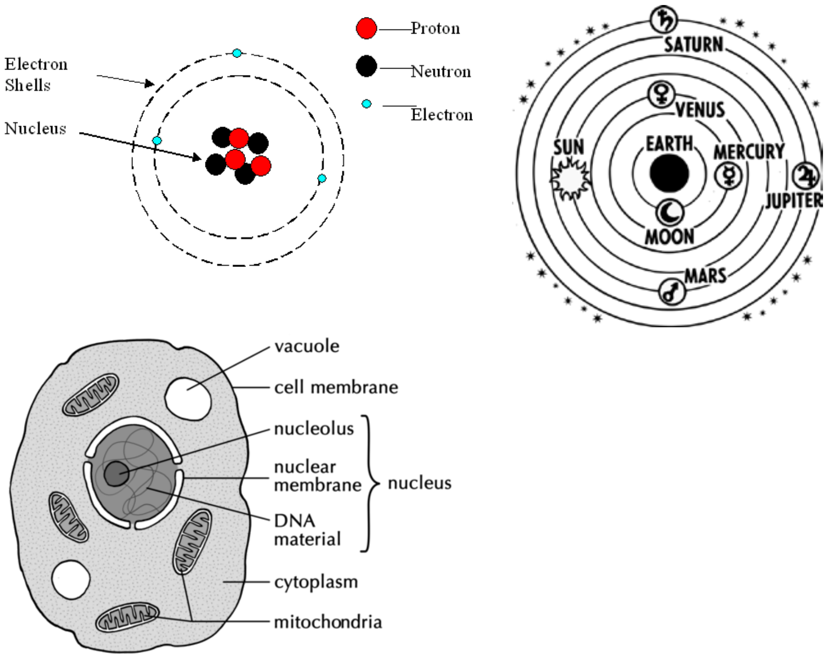


Figure 1. Static representations of atomic structure (top-left), our solar system (top-right) and the structure of the animal cell (bottom). Illustrations from *Creative Commons*.

The three static representations in Figure 1, which depict the structures of the atom, the Solar System, and the animal cell, are easy to understand by secondary school students. Although their immediacy and clarity derive from their stillness, from their concentration solely on position, Bergström (2008) stresses that, when several objects are grouped in a composition, they relate to other elements within it, as well as to the viewer and the format. They establish relationships of attraction and repulsion among the diverse compositional elements, and potential paths and directions for movement may be drawn, since structures can actively define them, as is the case of the atomic and solar orbits. For Leborg (2004: 48) too, the visual positioning of an object may suggest forces that have influenced it or will influence it and eventually move it. Thus, positional or structural representations are more dynamic than they appear to be.

The visual reproductions of complex dynamic relationships among structural components call for the aid of vectors (i.e. lines and arrows pointing to the direction of movement or showing provenance). They are visual metadiscourse items without which it would be extremely difficult, if not impossible, to grasp complex relationships and movements at a glance.

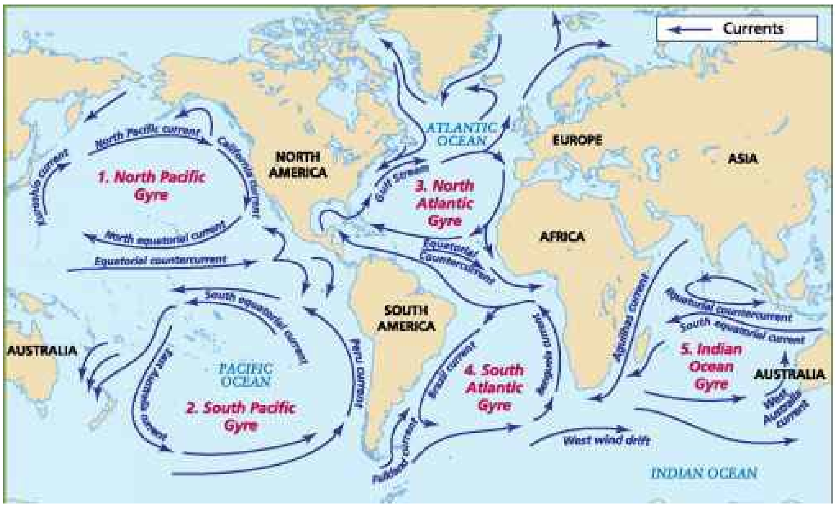


Figure 2a. Dynamic representation of oceanic currents with the aid of vectors. Illustration from *Creative Commons*.

The two instances in Figures 2a and 2b, representing oceanic currents (above) and cell physiology (below), are prime examples of the crucial role of vectors. An alternative to vector use for showing narrative dynamism is what is known as ‘small multiples’ (Tufte 1990); that is, small-sized and quasi repetitive designs that visually enforce comparisons of changes because the constancy of their layout draws attention to changes in the data, not in the data frames.

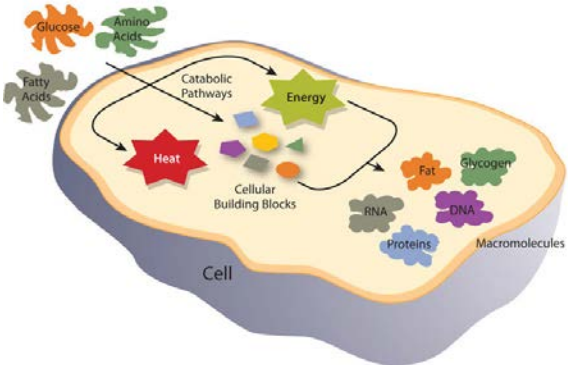


Figure 2b. Dynamic representations of animal cell physiology with the aid of vectors. Illustration from *Creative Commons*.

A good case in point is the representation of cell division (mitosis and meiosis) typical of biology textbooks. The invariable frames (i.e. the cell walls) make the viewer concentrate on the changes that occur from phase to phase in their inside (Figure 3).

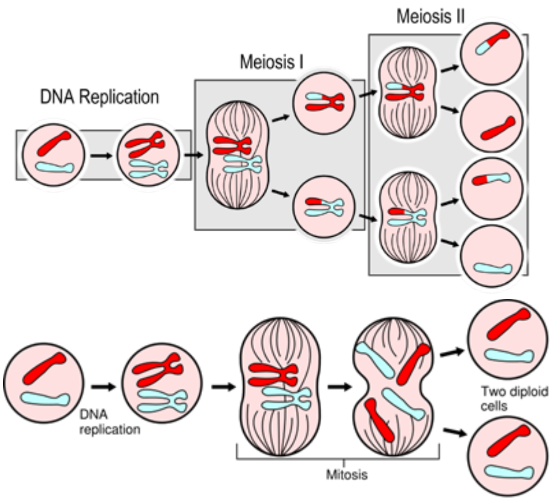


Figure 3. Dynamic representations of cellular division by means of small multiple designs ('small multiples') and vectors: mitosis (top) and meiosis (bottom). Illustrations from *Creative Commons*.

A fifth and last challenge is the subjectification of layouts, rhetorical organisation and representations of objects and concepts, which I have termed ‘*stylisation*’. Addressers can choose between telling a linear narrative (progressive or regressive) or dwell on a particular stage of it, a strategy popularly known as ‘frozen moment’. They can also highlight a certain structural component with a myriad of resources: position (central or marginal, top/bottom, left/right), vectors, frames, size, texture, colour (hue, tone, saturation), and repetition. They may even want to embellish functional elements, such as vectors or frames, or narrate events by means of a metaphorical scenario borrowed from other domains.

All in all, then, scientific visual representations face five major challenges that threaten the clarity of their explanatory, argumentative, illustrative, or directive quality:

1) Their communicative unidirectionality;

2) Their holistic and synthetic nature;

3) Their inherent statism and hence their illusory narrative potential;

4) The scarce visual literacy among average users (addresser and addressees, who respectively codify and interpret the message);

5) Stylisation at a rhetorical, representational, and ornamental level.

To them we must add some incontestable facts:

1) Cultural conventions of a representational sort may be transgressed by individual and disciplinary practices;

2) Visual effects are not ‘mathematical’ or infallible: they depend on the addresser’s skills as designer and on the addressee’s interpretive abilities (on visual literacy on either end);

3) Perception, both in the visual codification and decodification processes, always involves a certain degree of subjectivity and is conditioned by individuals' cultural background

In principle, any scientific abstract should summarise the complete research process detailed in the scientific article or report, unless authors decide to emphasise a single specific stage or instant visually. This selective narrative of 'frozen moments' is exclusive to the GA, the genre under study, and cannot be found in its verbal and video counterparts. Analogously, 'promissory contents' are very difficult to express visually but abound in verbal conference abstracts, which only specify the purpose and methods of the research without any data and, logically, with no subsequent discussion or conclusion, although tacitly commit to having them ready at the time the conference takes place.

Incompleteness and graphical stylisation seem then to be the most saliently divergent features between verbal and graphical abstracts. Yet the possibility of 'not showing all' (since visuals are intended to show rather than tell), makes the GA drift apart from the general definition of abstracts as "stand-alone mini texts" that act as "previews or road maps for the research article" (Swales/Feak 2009: 2). Another remarkable difference is the 'entertainment expectation' generated by any contemporary visual instance of scientific dissemination and in large measure due to stylisation. To the 'selective representation' and 'promotionalism' (Hyland 2004: 63-64) archetypal of every abstract, visuality incorporates a 'scifotainment' quality (Zhang/O'Halloran 2014; Zhang 2019) to GAs and video-abstracts whereby their amusing potential equals or even surpasses their informativity. Not in vain, Laszlo (2006: 2) describes any abstract as a "shop window" of science and the Mentor of Cell Press' blog *Crosstalk*, Kerry Evans,[1] vindicates the aesthetic quality of visual abstracts, enjoyable by experts and laypeople alike. The truth is that,

1 Cell Press and its associated blog, *Crosstalk,* belong to Elsevier. Evans is also Senior Managing Editor of the journals *AJHG* and *Immunity.* Her 2018 claim as to the 'universality' of visual abstracts is available at <https://crosstalk.cell.com/blog/6-tips-for-creating-a-video-abstract-anyone-can-enjoy>

added to a generalised lack of visual literacy, non-experts may not have the level of specialised knowledge necessary to decode the GA message, and that cannot be supplied or mitigated by metadiscourse, no matter how exhaustive its repertoire may be.

1.1 The 'before and after' of graphical abstracts

A widespread misbelief among scholars and discourse analysts is that GAs, also known as 'ToC (table-of-content) images', 'ToC entries', 'ToC graphics/figures', or 'Graphical ToCs', had their origin in Elsevier's 2012 'Article of the Future' project, when in reality they date back to much earlier. GAs result from the fusion of three visual genres: the ancient emblem, and the more modern infographic and billboard advertisement (or advertising poster). Their viewable surfaces are ample (one full page for the emblem and a whole panel for the infographic and the billboard/poster) and the three of them admit verbal insertions, which tend to be minimal in the infographic and billboard advertisement. The emblem was used profusely from the XV to the XVIII centuries and consisted of a motto (often in Latin), an image, and a textual commentary or foot legend, each of which was carefully framed (see Figure 4, left). In fact, 'emblem' meant in Greek 'what is framed' or 'embossed ornament'. Its goal was to disseminate an allegory, a moral lesson, a concept, or the hagiography of some prominent individual (a saint or a king).

The infographic, in contrast, conveys dynamic information (e.g. how something works, such as the human digestive process in Figure 4) or how the different items making up a system are classified. It normally uses sketchy verbal labels accompanying the vectors, and may attach longer explanatory notes in side captions and adjacent diagrams. The process shown in Figure 4 additionally includes a zoom-in focus to reveal some inner structure invisible to the naked eye.

Figure 4. Pictorial sources influencing the contemporary GA: the emblem (top-left), the infographic (top-right) and the billboard advertisement (bottom). Illustrations from *Creative Commons.*

Very different is the billboard advertisement below it: billboards generally carry less verbal text but are the only source that makes overt use of physical-act directives (a term coined by Hyland 2002, 2005), which tell the reader/viewer what to do outside the text. Whereas framings, vectors, and brief verbal insertions have become stable GA ingredients, cognitive and textual directives have turned into graphical vectors that may in turn be superseded by (framed) visual collocations and graphically engage readers/viewers, telling them how to understand and interpret notions and relations and how to progress within the text.

In previous work (Sancho Guinda 2016, 2019, 2022 forthcoming), I have criticised the confusion caused by vague and disparate editorial policies regarding the crafting of GAs. Elsevier's initial instructions, which lasted published online well into 2020,[2] exposed that GAs must "allow viewers to quickly gain an understanding of the take-home message of the paper", as well as to "encourage browsing" and "promote interdisciplinary scholarship". These three instructions have been kept intact in the updated 2020-2021 version and are still too vague for a successful insertion of visuals inside the panels. Contrastingly, two of the most specialised Elsevier journals, *Cell* and *Polymer*, provided back then more strict and clearer guidelines in addition to "capturing the essence of the paper". *Cell* detailed the type of file and fonts, discouraged heavily saturated colours and the expression of speculative content, advised reducing verbal text and the number of panels to the minimum, concentrating on a single point or idea, creating reading paths from top to bottom or from left to right, and discarding excessive detail to avoid distractions.

In a similar fashion, *Polymer*[3] underlined the appeal of the image, which should be enough to "capture the reader's attention", and encouraged the use of colour, graphs, drawings and chemical reaction schemes, but discouraged tables, spectra and added text. Journals from other publishers, such as *The Journal of Medical Internet Research*, one of the first open-access e-health publications, offered more refined guidelines and rejected image reuse, logos, screenshots, collages, general stock photos, or cartoonish illustrations.

---

2 Retrieved from <https://www.elsevier.com/authors/journal-authors/ graphical-abstract> (now inoperative and leading to the current updated 2021 guidelines)

3 Retrieved from <https://www.elsevier.com/wps/find/journaldescription.cws_home/30466?generatepdf=true>

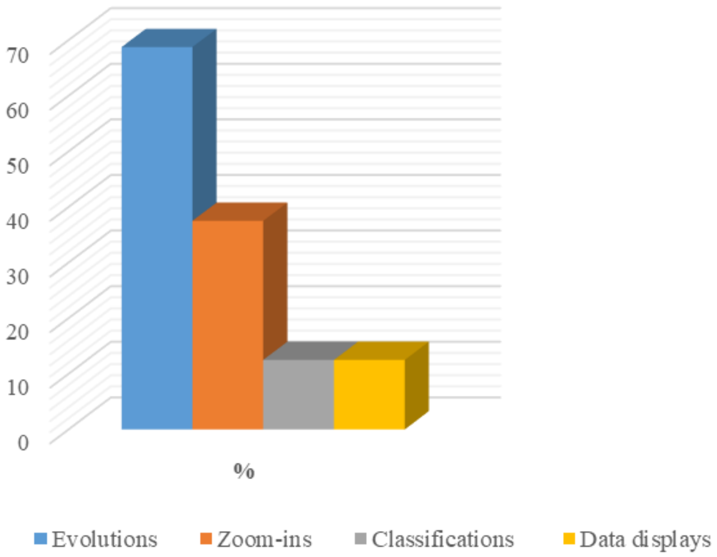


Figure 5. Percentages of GA types in Elsevier's 16-exemplar guidelines to authors between 2015 and 2020.

The cross-disciplinary guidelines launched by Elsevier between 2015 and 2020 were ambiguous and gathered 16 exemplars (see their identifying DOIs at the end of the chapter) that I grouped into four basic sorts:

1) *'Narrative evolutions'*, which through vectors or items collocation show some progression or change in state or condition. They comprise equations and chemical reactions and often limited the linear narrative sequence of science (IMRD) to methods and results, omitting introductions and discussions;

2) *Classificatory diagrams*, which organise information with or without vectors;

3) *Zoom-ins*, which foreground detail hardly or no visible to the naked eye;

4) *Data displays*, consisting in tables, graphs and other means of data representation.

Pure or in combination, these four types of GA yielded the percentages shown in Figure 5 (above), narrative evolutions and zoom-ins being the most numerous. Essentially, all four types are but subjective rhetorical encapsulations of the research story; that is, rhetorical stylisations of the scientific content.

In practice, though, science blogs, academic network forums and the tables of contents of journals were teeming with GAs with structures that did not conform to those four types of the webpage exemplars, as Examples (1-6) instantiate here. GAs might divide into several framed panels, or consist in a metaphorical scenario taking up the optical centre or one full panel, or evolving from one subpanel to another, and include embellished elements, such as ‘prettified’ anthropomorphic molecules or cartoonish renditions.

In Example (1), the authors have used emojis to evaluate the outcome of the molecular bonds defining the narrative. In (2), the chemical element is ‘prettified’, in this case given anthropomorphic appearance and a ‘wardrobe’ that metaphorises its ‘trans-metal’ chemical behaviour. Example (3) is at the same time metaphorical (for evoking the transcendental Hamletian doubt of Shakespeare’s famous character), inter-discursive (for borrowing the quasi-exact literary quotation) and humorous (for taking playful advantage of the spelling and phonology of the verb ‘to be’ and ‘Betaine’, the name of the chemical compound under study). The intertextual and inter-discursive element, illustrated here with a Shakespearian head and a large-size quote, is emphasised spatially at the optical centre. Nevertheless, it does not occupy the entire panel, being framed by molecular structures that function as ‘ad hoc pointers’ (Yus 2009) alerting the reader/viewer of the non-literal meaning of the message.

Also exploiting comical effects, (4) draws on a well-known science-fiction character, Dr. Spock (from the TV series *Star Trek*) as mnemonic, given that its pronunciation coincides with that of the acronym of the chemical compound researched. It also resorts to a highly promotional verbal insertion resembling an advertising slogan (“100% complete & surface kinetics”). Unlike the reduced central space of Example (3), in (5) we can observe a metaphorical scenario unfolding across the full panel and whose ad hoc pointer is the molecule framing one of the characters' head (Mr Hyde's), who enacts the unpredictable, wild and potentially harmful changeable behaviour of the chemical substance described.

(1) https://doi.org/10.1039/C8DT04394A
(2) https://doi.org/10.1021/acs.inorgchem.1c02961
(3) https://doi.org/10.1002/chem.201706036
(4) https://doi.org/10.1002/anie.201612037
(5) https://doi.org/10.1039/C5CS00057B

Examples (6) and (7) show how authors may segment the scientific narrative into panels which work as reading paths with no vectors, and even adopt an art style or insert speech balloons that set a comic strip register.

(6) https://doi.org/10.1021/acsami.8b20504
(7) https://doi.org/10.1021/bi4010039

If logical connectives and metaphorical choices are, according to Gilbert (2013: 170-171), crucial in science communication, it is worthwhile to heed what metadiscoursal tendencies prevail in Elsevier's past and present GA exemplars. Its 2015-2020 webpage contained model samples that used a wide array of metadiscourse items (Figure 6), of which the most employed were, in decreasing order, vectors, verbal insertions for glossing, labelling and commenting, functional uses of colour, and framing for boundaries between moves, stages and steps, and for delimiting time lapses and research actions. In equal proportions, collocation and size were chosen in 50% of model samples to denote conceptual or procedural saliency, and each component of the triad formed by frozen images, typography and similar shapes standing for functional equivalence reached approximately 30% of all uses. Slightly less than 20% of the exemplars exhibited an optical centre to highlight the importance of concepts and actions, and trope icons (i.e. the metonymical visual allusion to the tools or instruments used in procedures, mostly in the methods section) were employed rather discreetly. Image overlaps to express simultaneity and narrative embeddings (e.g. a diagram inside a graph or vice versa) were minimally employed and, expectably, there were no metaphorical encodings or register shifts, as there was no use of expressive punctuation, creative typography, interdiscursivity, intertextextuality, home-made like art styles, cartooning, or onomatopoeias.

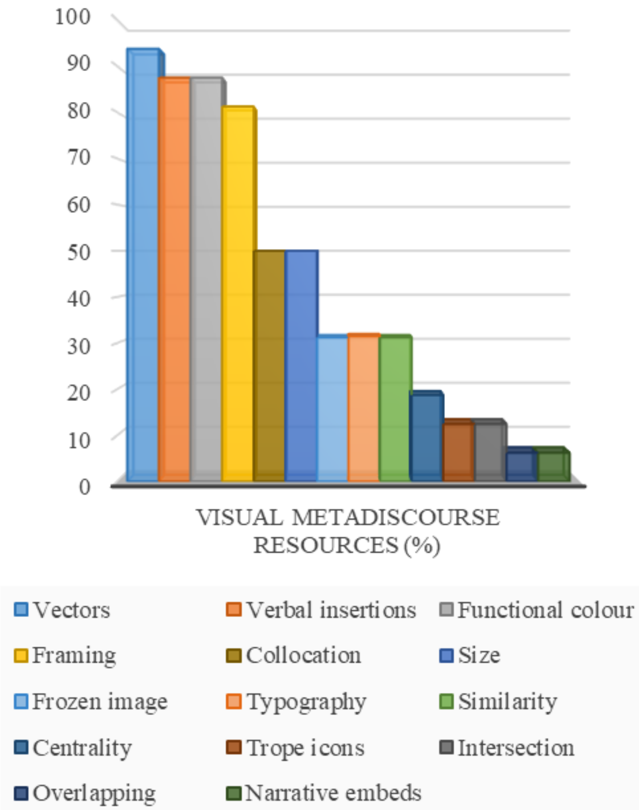


Figure 6. Metadiscourse use in Elsevier’s 2015-2020 exemplars.

What have Elsevier's normative changes brought about? Its current online guidelines[4] have notably bet for simplification. They give precise instructions concerning image size, file type and font, demand that the GA has a clear start and end, preferable reading paths from top to bottom or from left to right, and that no additional text, outline or synopsis are included – any text label must be part of the image file. They warn authors off redundant titling (so that "Graphical abstract" does not appear in the image file), cluttering detail, and the unnecessary use of white space. Authors are also encouraged to check the guidelines of the specialised journal they will write for, as it may add further instructions. The guidelines conclude with the provision of seven hyperlinks, in a section entitled 'Further readings & resources', leading to research articles in Elsevier medical journals that discuss GA features to increase their efficacy, to a recorded PowerPoint presentation dealing with the GA topic, to video demos and tutorials, and to a free template, reproduced under these lines (Figure 7). I have called it Elsevier's 'tripartite model' because of its three-panel structure, although it was first adopted by medical journals such as *Annals of Surgery*.

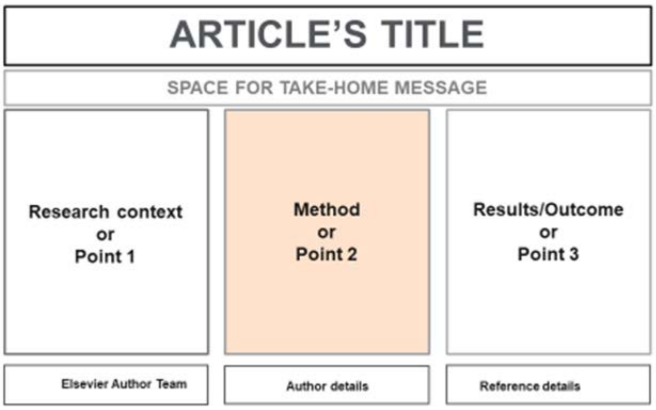


Figure 7. Elsevier's recent 'tripartite model' (Rendition of the Publisher's free-download original).

4 Retrieved from <https://www.elsevier.com/authors/tools-and-resources/visual-abstract>.

The tripartite structure is qualified in the webpage as “simple”, accessible”, and “visually stimulating”. Simplification is also manifest in the number of exemplars provided by this new guidelines-to-authors page: just one fourth of the number of model samples disseminated by the 2015-2020 guidelines.

It is certainly a good idea to divide the GA’s informative spaces, because the interpretive skills required from viewers/readers are in this way more realistic and can be exercised gradually. In other words, each of the three panels contains a rhetorical move or a main idea, and thus there is no need to decode the message holistically and in one go, as was the case of global depictions through narrative evolutions, classificatory diagrams, zoom-ins and data displays, or metaphorical scenarios (i.e. all of them ‘rhetorical stylisations’) occupying one full panel. The progressive sequence of the tripartite model, in this respect, not only makes scholarly summaries more homogeneous, but also prevents rhetorical stylisation from becoming the main narrative thread of the research. Further, it makes it difficult to insert a metaphorical scenario in any of the three panels, as the metaphor would be hard to segment and visually relate with the rest of panels conveying literal information. This implicit discouragement of metaphorical meanings raises more focused and accurate content expectations in readers/viewers.

The consecutive collocation of panels also makes us assume that the information is presented orderly, flowing chronologically from left to right, especially if the chosen rhetorical option is the presentation of the research context in the first panel, followed by the methodology in the second, and finally by the research outcome in the third. This logical succession spares vector use, since it is no longer necessary to mark the reading path with arrows or lines, with colour fadeout or saturation, or with verbal metadiscourse (i.e. sequencers such as ‘first’, ‘second’, then’, ‘next’, etc., or numbering and lettering). One question inevitably arises: What if authors present three points that are not chronologically related? The new guidelines say nothing about the visual development of textual progressions other than temporal, when the three points exposed could perfectly belong to the same rhetorical move. For example, they might be three important methodological innovations, or three outstanding results in order of importance, not in chronological sequence. Then it would be necessary to include verbal text (headings, at least) in each of the panels, or some explanation, which would go against the intended visual immediacy of GAs.

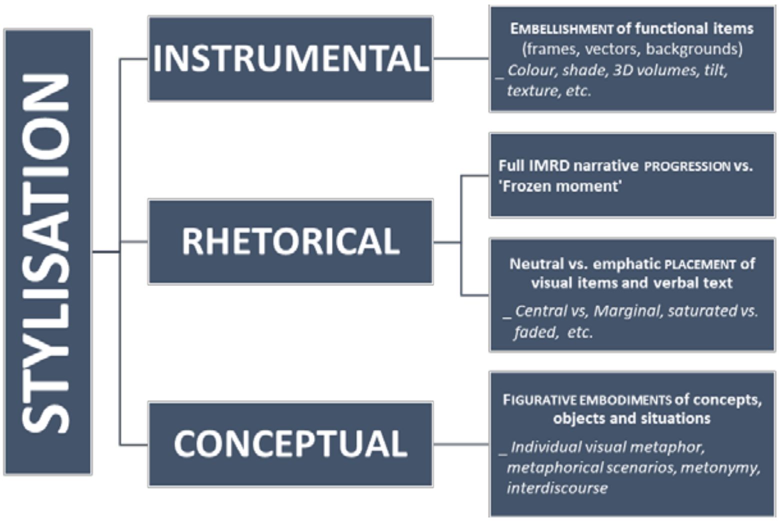


Figure 8. Basic taxonomy of visual stylisation in GAs (my own).

By the same token, subtitling and vectors may be practically superfluous in the context-method-outcome version, but necessarily become almost mandatory in the three-point one. It should also be borne in mind that the tripartite panel sequence does not lend itself very much to the embellishment of functional items such as vectors or frames (to what we could term ‘instrumental stylisation’, see Figure 8) or to colouring backgrounds or adding textures (unless they are part of meaning codes), which would be pointless and distracting. Scholars will be most likely engrossed in complying with the formal requisites of the template rather than in embellishing their visuals.

While the research outcome or results normally call for graphs, infographics, photographs or diagrams (and so does the method), the research context (i.e. purpose, motivation, problem to be solved or knowledge gap to be bridged, standard practices to be improved, etc.) is hard to condense visually and more often than not will require full expression in verbal text. It is equally possible that we find GA instances with the method and research outcome totally verbalised as well. The question is, whether we can call 'graphical' the distribution of verbal text into three clear-cut panels—or conversely put, whether panel framing suffices to ensure the 'graphical' quality of GA samples, despite their considerable amount of verbal text.

2. The new exemplars: Straightforward at last?

In its instructions, unfortunately, Elsevier does not clue us as to whether panel frames enclosing verbalised information is what makes a GA. The genre is defined as "concise" and "pictorial", but no maximum percentage of verbal text is recommended, nor what the minimal requisites for visuality are. One of the four exemplars displayed (GA.4) reaches around 80% of written content in relation with the total GA surface usable, which does not suggest much 'visuality', and the approximate percentages of two other exemplars (GA.1 and especially GA.3) are no less than 30% and may amount up to 60%.

(GA.1) https://doi.org/10.1053/j.ajkd.2020.01.008
(GA.2) https://doi.org/10.1016/j.kint.2021.01.029
(GA.3) https://doi.org/10.1016/j.xkme.2020.02.006
(GA.4) https://doi.org/10.1016/j.jclinepi.2020.11.007

Moreover, the icons accompanying the verbal text in GA.1, GA.3 and GA.4 could be dispensable, as they seem too tangential or metonymic to the written message. This happens with the icons in the left-column table headers in GA.1, with the method “Interview to explore patient experience” at the bottom of the leftmost panel in GA.3, or with the action “soldier on”, at the very bottom of the right-hand panel in the same exemplar, which requires knowledge of the idiom. Other icons are superfluous (e.g. the pills in GA.4, under the heading ‘placebos’), or simply redundant with the writing. The latter is the case of the map of the USA and the Pacific Island Territories’ flags in GA.1’s table headers (left column), which have already been displayed in the leftmost panel and could have stood alone, without any verbalisation, in the said left-column table headings.

The same applies to the factory icon in GA.4, as it contributes no fresh information at all. Much more to-the-point and revealing are the icon choices in GA.2, labelled with a succinct noun phrase and sequenced by vectors in the take-home message below the paper’s title, and expeditiously showing proportions in each of the three panels, which should be enlarged to improve readability. It is uncertain whether the final graph, located in what seems to constitute a fourth panel, has been designed ad hoc for the GA or extracted from the results section of the article, in which case it could be redundant, since some journals display GAs together with all other illustrations in the article. The directions given by Elsevier appear contradictory in this regard: on the one hand, it is stated that the GA “could either be the concluding figure from the article or better still a figure that is specially designed for the purpose”, so image reuse is allowed although not recommended. On the other hand, under the heading ‘Instructions’, Elsevier asks for “an *original* image that clearly represents the work described in the paper” (italics mine). The request is indeed stringent (“Authors must provide…”) which ambiguously overrides the previous admission of recycled article graphics.

Elsevier should also be clearer about the functionality of the visual items to be used by authors. Reasonably, icons may be employed as ‘attention getters’ and ‘goal announcers’ anticipating more detailed verbal content (both are terms from Hyland's 2005 metadiscourse taxonomy), but this systematic use propping up and advancing the verbal text that conveys the truly newsy information may not be enough to consider a summary 'visual/graphical'. Bulleted verbal text or verbal text having more or less the length of an average bullet point does not theoretically need any visual illustration, unless emphasis or high reader/viewer engagement is sought. Such engagement is usually a given in very specialised texts, because journal readers are motivated professionals who need to update their knowledge and daily praxis or want to promote themselves as scholars. At the most, those icons beside bulleted or reduced portions of text could be taken as 'facilitators' or 'spotters' that help locate a certain type of information much more quickly, but their relation with the verbal message cannot heavily rely on metonymy, which could escape the eye of untrained cultural insiders and even more that of experts from other cultures. This is the risk of phrasing information from a very specialised domain into idioms or folk wisdom that must be later translated into visuals (e.g. "soldier on" in (GA.3)): metaphorical thought differs among individuals and across cultures, and may harm the universality pursued by scientific discourse if not appropriately used.

A sweeping glance at Table 1 may give a comprehensive picture of the rhetorical profile of the four Elsevier exemplars. As can be observed, there is not a single exemplar that meets all the requisites dealing with rhetorical moves or sections. The approximate amounts of verbal text are quite high in all samples, and the choices between the rhetorical options of 'research context-method-outcome' and 'point 1-point 2-point 3' are perfectly balanced (50% each).

EXEMPLAR	VERBAL TEXT % (APPROX.)	C-M-O OPTION	POINTS 1-2-3 OPTION	TAKE- HOME MESSAGE UNDER TITLE	CONCLUSION CAPTION	AUTHOR DETAILS	JOURNAL DETAILS	REFERENCES
GA.1	30-40	✓	✗	✗	✓	✗	✓	✓
GA.2	20-25	✗	✓	✓	✓	✗	✓	✓
GA.3	55-60	✓	✗	✗	✓	✗	✓	✓
GA.4	75-80	✗	✓	✗	✗	✗	✗	✗

Table 1. Rhetorical profile of Elsevier's new GA exemplars.

Only one exemplar (GA.2) reserves space under the title for the take-home message of the article, whereas the rest of samples provide captions with the conclusion inside a caption at the bottom of the GA. All exemplars but one (GA.4) facilitate journal details (title and logo) and (GA.4) is again the only sample not providing references. These may be minimal ((GA.2) just mentions the first author and the year of publication) and it is not sure whether they cite the authors' present work, whose content is summarised by the GA, some previous work of theirs used as point of departure, or somebody else's research. Author details (e.g. affiliation and academic status) are lacking in every exemplar and, curiously enough, (GA.3) gives recognition to the GA designer, who is not part of the research team (assuming that the reference given cites the researchers' work).

As for the visual metadiscourse items most employed, recourse to typographical emphasis is rife, as is the use of colour. The number of panels is dubious in the first exemplar, because the second and third framed spaces make up a twin table that does not visually differentiate the two aspects tackled by the results/outcome section and the second and third panels appear merged into one. Panels have headings in all exemplars excepting (GA.4), whose captions with verbal text have their own typographic emphasis but their integration within the larger structure is not self-evident, and the absence of a general title for the abstract contributes to this uninformative effect. This exemplar is the most ambiguous instance in what regards reading paths, moves, and colour code meaning: there appears to be an intentional choice of reddish, greenish and purplish tones for the vectors and captions, but their number and multi-directionality end up gathering too many stimuli and the colours are too faded. The verbal text in the captions, grammatically mixed (i.e. randomly consisting in noun phrases and full sentences instead of in a consistent single grammatical formula), hampers any mnemonic attempt, which cannot be redressed with bullet points, rather unnecessary. Bulleting or not the information framed by the panels does not make any difference as to clarity and discourse economy.

EXEMPLAR	PANEL NUMBER	PANEL HEADERS	PANEL FRAMES	VECTORS	COLOUR USE	COLOUR CODE	BULLETS	VERBAL MD	TYPOGRAPHY
GA.1	2-3?	✓	✗	✗	✓	✓	✗	✗	✓
GA.2	3	✓	✓	✓	✓	✓	✗	✗	✓
GA.3	3	✓	✗	✗	✓	? ✓	✗	✓	✓
GA.4	3	?	✓	✓	✓	✓	✓	✓	✓

Table 2. Metadiscourse resources used by Elsevier's new GA exemplars.

Verbal metadiscourse is present in (GA.3) (an adversative 'however', inverted quotes, and a question mark in the title) and (GA.4) (a question mark in one of the headings). Obviously, the percentage of use is low and its necessity debatable, although the use of interrogatives captures attention powerfully and helps readers/viewers to reflect on the topic being developed and to build informative expectations. Also questionable is the vector pointing to the plot line graph in (GA.2), redundant since the reading path has already been marked by the consecutive panel collocation from left to right. Without doubt, Elsevier's new exemplars could be leaner and still there is room for improving and optimising their rhetorical resources.

Overall, the tripartite model adopted by Elsevier pursues more objective and universal rhetorical patterns of science dissemination than the ones known so far; patterns that transmit scientific and technological innovation and are appealing, quick, clear, and capable of sustaining interest. To that end, framed panel spaces prevent stylisation and its three connatural dangers: trivialisation, exclusion, and misinterpretation—the latter two even among experts. Panel frames delimit space, enhance the information contained in them, and therefore do not foster instrumental or conceptual embellishments, intertextuality, or humour, which may be sources of confusion and misunderstanding. As Bergström (2008: 61) puts it, "structure highlights the message" and delimitation draws "a line between what is to be included and what it isn't". Likewise, the elimination of non-scientific cultural references (e.g. metaphorical scenarios, idioms, allusions to both encyclopaedic and too local knowledge) ensures the prevention of exclusion owing to obscured meanings and a lack of familiarity with cultural references and backgrounds. Space limitation, to sum up, seems to go hand in hand with discursive restrictions, and the tripartite compositional arrangement in panels may be seen as an interactive macro-metadiscursive item that safeguards the linearity and monosemic quality that characterise scientific discourse.

3. Concluding thoughts: What lies ahead

Despite its advantages of structural simplicity, prevention of confusion and discursive economy, the tripartite GA model has its flipside, which comprises three capital issues.

The first of them is didactic. By and large, exemplars remain uncommented, which means that scholars cannot know what their weak points are, nor learn from their colleagues' effective design strategies and with them increase their visual repertoires.

Much has been written on the urgency to impart visual literacy instruction to scholars and higher education students. I have myself noted (2015, 2016, 2019, 2022 in press) the graphicacy skills gap common to academics and professionals and vindicated the joint promotion of visual literacy training by educational and research institutions, corporations, and academic gatekeepers. Publishers could concisely explain the strengths and weaknesses of their GA exemplars or leave some spaces for comments from other academics in the field and akin research areas. Prompts and visual inventories (based on the attempts at visual grammar by Kress & van Leeuwen 1996; Leborg 2006 and Machin 2007), together with compositional strategies, could be also facilitated in an appendix or in attached files as part of the 'Further reading & resources section'.[5]

The second issue involves research from communication specialists and applied linguists. The present small-scale study is confined to very few medical disciplines, because the editorial provenance of Elsevier's four exemplars is *AJKD (American Journal and Kidney Diseases)*, *Kidney International*, *Kidney Medicine*, and *ICE (Journal of Clinical Epidemiology).* It remains to be determined whether the metadiscourse strategies analysed here are characteristic of these disciplines or common to others. Larger and more varied corpora should be compiled

[5] See the inventories of visual items and compositional strategies I propose as metadiscourse in the Appendix.

and scrutinised to find out what (trans)disciplinary trends crop up and whether future stylisations emerge once the tripartite rhetorical stylisation settles down as a GA standard across disciplines. Will stylisation, if any, bring distracting elements and subjective modality devices that jeopardise clarity, economy and immediacy, or curtail subjectivity in favour of textual comprehension? What will be the evolution of the template and what influence may it exert on related journals, especially on open access ones? Will it in the end contribute to the democratisation of science dissemination?

The third and last issue deals with identity and power. GA templates may turn into editorial branding devices for multinational publishing houses, although this editorial distinctiveness is partly achieved at the expense of authorial creativity. Templates, in effect, keep academics from exploring pictorial possibilities that might engender new representations and new knowledge, because as Kress (2010: 27) concluded, “learning is a dynamic process of sign making” and “representation makers are knowledge makers”. Hopefully GAs serve to reconcile control and creativity, disseminate and promote knowledge in increasingly more dynamic and democratic ways, and come finally to portray—and brand—a society defined by the altruistic values of universality and community originally intrinsic to science.

References

Barry, Anne Marie S. 1997. *Visual Intelligence. Perception, Image, and Manipulation in Visual Communication.* Albany, NY: SUNY Press.

Bergström, Bo 2008. *Essentials of Visual Communication.* London: Laurence King Publishing.

Dwyer, Francis M. 1978. *Strategies for Improving Visual Learning.* State College, PA: Learning Services.

Gilbert, John K. 2012. Helping Learning in Science Communication. In Gilbert, John K. / Stocklmeyer, Susan (eds) *Communication and Engagement with Science and Technology: Issues and Dilemmas. A Reader in Science Communication.* New York: Routledge, 165-179.

Hyland, Ken 2002. Directives: Argument and Engagement in Academic Writing. *Applied Linguistics.* 23/2, 215-239.

Hyland, Ken 2004. *Interdisciplinary Discourses: Social Interactions in Academic Writing.* Ann Arbor, MI: The University of Michigan Press.

Hyland, Ken 2005. *Metadiscourse: Exploring Interaction in Writing.* London: Continuum.

Kress, Gunther 2010. *Multimodality: A Social Semiotic Approach to Contemporary Communication.* New York: Routledge.

Kress, Gunther / van Leeuwen, Theo 1996. *Reading Images. The Grammar of Visual Design.* London: Routledge.

Laszlo, Pierre 2006. *Communicating Science. A Practical Guide.* Berlin: Springer.

Latour, Bruno 1990. Drawing Things Together. In Lynch, Michael L. / Woolgar, Steve. (eds.) *Representation in Scientific Practice.* Cambridge, MA: MIT Press, 19-68.

Leborg, Christian 2006. *Visual Grammar.* New York: Princeton Architectural Press.

Lester, Paul M. 1995. *Visual Communication: Images with Messages.* Belmont, CA: Wadsworth Publishing Company.

Machin, David 2007. *Introduction to Multimodal Analysis.* New York: Hodder Arnold

Ogborn, Jon / Kress, Gunther / Martins, Isabel / McGillicuddy, Kieran 1996. *Explaining Science in the Classroom.* Buckingham / Philadelphia: Open University Press.

Pauwels, Luc 2006. Introduction: The Role of Visual Representation in the Production of Scientific Reality. In Pauwels, Luc (ed) *Visual Cultures of Science. Rethinking Representational*

Practices in Knowledge Building and Science Communication. Hanover, NH: Dartmouth College Press, vii-xix.

Sancho Guinda, Carmen 2015. Genres on the Move: Currency and Erosion of the Genre Moves Construct. *Journal of English for Academic Purposes*. 19, 73-87.

Sancho Guinda, Carmen 2016. Semiotic Shortcuts: The Graphical Abstract Strategies of Engineering Students. *Hermes—Journal of Language and Communication in Business*. 55, 61-90.

Sancho Guinda, Carmen 2019. Promoemotional Science? Emotion and Intersemiosis in Graphical Abstracts. In Mackenzie, J. Lachlan / Alba-Juez, Laura (eds.) *Emotion in Discourse*. Amsterdam/Philadelphia: John Benjamins, 357-386.

Sancho Guinda, Carmen 2022. This Has Changed: 'Out-of-the Box' Metadiscourse in Scientific Graphical Abstracts. In D'Angelo, Larissa / Mauranen, Anna / Maci, Stefania (eds.) *Insights into Metadiscourse: New Research and Approaches in Digital Communication*. Houndmills, Basingstoke, UK: Palgrave Macmillan-Palgrave Pivot, 81-114.

Swales, John M. / Feak, Christine B. 2009. *Abstracts and the Writing of Abstracts*. Ann Arbor, MI: The University of Michigan Press.

Trumbo, Jean 2006. Making Science Visible: Visual Literacy in Science Communication. In Pauwels. Luc (ed.) *Visual Cultures of Science: Rethinking Representational Practices in Knowledge Building and Science Communication*. Hanover, NH: Dartmouth College Press, 266-289.

Tufte, Edward R. 1990. *Envisioning Information*. Cheshire, CT: Graphics Press.

Tufte, Edward R. 1997. *Visual Explanations. Images and Quantities, Evidence and Narrative*. Cheshire, CT: Graphics Press.

Yus, Francisco 2009. Visual Metaphor versus Verbal Metaphor: A Unified Account. In Forceville, Charles / Urios-Aparisi, Eduardo (eds.) *Multimodal Metaphor*. Berlin/New York: Mouton De Gruyter, 173-196.

Zhang, Yiqiong / O'Halloran, Kay L. 2014. From Popularization to Marketization: The Hypermodal Nucleus in Institutional

Science News. In Djonov, Emilia / Zhao, Sumin (eds.) *Critical Multimodal Studies of Popular Discourse.* London: Routledge, 160-177.

Zhang, Yiqiong. 2019. Scifotainment: Evolving Multimodal Engagement in Online Science News. In Sancho Guinda, Carmen (ed.) *Engagement in Professional Genres.* Amsterdam/Philadelphia: John Benjamins, 244-258.

Graphical abstract samples in Elsevier's 2015-2020 guidelines-to-authors webpage

(1) http://dx.doi.org/10.1016/j.jep.2011.05.043
(2) http://dx.doi.org/10.1016/j.addr.2011.05.016
(3) http://dx.doi.org/10.1016/j.addr.2011.03.013
(4) http://dx.doi.org/10.1016/j.lfs.2011.05.011
(5) http://dx.doi.org/10.1016/j.bcp.2009.09.004
(6) http://dx.doi.org/10.1016/j.jconrel.2009.06.015
(7) http://dx.doi.org/10.1016/j.tet.2009.10.115
(8) https://doi.org/10.1016/j.jinsphys.2011.06.006
(9) https://doi.org/10.1016/j.jconrel.2011.06.015
(10) https://doi.org/10.1016/j.imavis.2011.05.002
(11) https://doi.org/10.1016/j.media.2011.05.018
(12) https://doi.org/10.1016/j.media.2011.01.006
(13) https://doi.org/10.1016/j.media.2011.01.005
(14) https://doi.org/10.1016/j.orgel.2011.07.021
(15) https://doi.org/10.1016/j.orgel.2011.06.015
(16) https://doi.org/10.1016/j.tet.2011.08.009

APPENDIX

Proposal of visual metadiscourse inventory and compositional strategies for GAs

1. Items inventory

Visual Metadiscourse Items	
ITEM	MEANINGS
Frames	Move, stage, step, boundary, temporal sequence or time lapse if consecutive
Vectors (arrows, lines, mathematical signs, numbering, lettering, narrative captions)	Reading paths, event clustering (temporal, spatial, causal)
Typography	Importance, emphasis, distinctiveness, classification tool
Object icons	Instrumentality o method, intervention
Cultural symbology	Taken-for-granted or well-known information, deducible property or action (e.g. ticks and crosses for pros & cons or right & wrong)
Verbal insertions (labels)	Glosses, naming and identification of entities, events, and objects
Colour use (saturation, tone, chromatic harmony vs. dissonance)	Importance/salience, emphasis, cohesion/unity, classification, distinctiveness
Register shifts through expressive punctuation and stylisation	Change in the interpersonal relationship between communication participants

2. Strategies inventory

Compositional Strategies	
STRATEGY	MEANINGS
'Frozen moment'	*In medias res* narrative
Focus and placement (e.g. foregrounding vs. backgrounding, centrality vs. marginality)	Salience, importance, emphasis, peripheral information or secondary role
Embedding	Subsumed item, inclusion
Overlapping	Simultaneity, superiority
Intersection	Commonality
Physical similarity	Functional equivalence
Schematisation	Selection of essential features & properties
Stylisation/embellishment	Authorial presence and stance
Metaphorisation	Authorial stance
Directionality (e.g. by vectors, collocation and juxtaposition)	Reading path and information flow
Fadeouts	Irreality, uncertainty, secondary importance
Colour code	Classification and clustering, physical or functional similarity
Interrupted contours (e.g. broken or dotted lines)	Hypothesis, doubt, lucubration, prediction, theoretical plane, irreality

PART 2

Digital metadiscourse and the patterning of social interaction

ELENA MANCA

Australian and US wineries on Facebook: Analyzing interactive and interactional resources

1. Introduction

Over the last few years, social media have been increasingly used by companies to advertise and sell their products (Kaplan/Haenlein 2010). Facebook is the biggest social network worldwide with 2.85 billion active users in the first quarter of 2021 and allows marketing managers to promote their company brands through the creation of pages. On the timeline of these pages, companies usually advertise their products, keep customers updated with the latest news on the brand and influence their customers' choices, behaviours and perceptions by posting messages, images and audios. Facebook also allows companies to exchange information quickly and easily and to establish immediate contact with customers.

As Karjaluoto et al. suggest (2015: 436), social media have contributed to the creation of new practices of contacting and engaging with customers. At the same time, the unique characteristics of the Internet have led to a redefinition of business strategies. Companies have to undergo a systematic process of understanding, attracting, engaging, retaining and learning about target customers (Ibeh / Luo / Dinnie 2005: 359).

The current paper aims to contribute to defining the interactive and interactional resources used by wine companies in business promotion through Facebook.

To this aim, two corpora of posts, posted on the Facebook pages of a series of Australian and US wineries, have been assembled. Corpora have been analysed following the theoretical model of metadiscourse proposed by Hyland (2005) and by means of analytical methods typical of Corpus Linguistics.

The paper focuses on the following research questions:

1. What linguistic strategies do wine companies use to inform, attract and engage their target customers on Facebook?
2. Do cultural factors influence the language used in business promotion through Facebook?

Section 2 of this paper describes the relationship between digital media and wine advertising, with a brief overview of the more recent research about this topic. Section 3 illustrates the theoretical framework of metadiscourse (Hyland 2005) and describes the linguistic resources employed in digital media. Section 4 provides details on the material and methods used in the current study. Section 5 reports the results of the analyses and, finally, Section 6 draws some conclusions and provides some indications on future research.

2. Digital media and wine advertising

Social media are defined as "a group of internet-based applications that build on the ideological and technological foundations of Web 2.0 and that allow the creation and exchange of User Generated Content" (Kaplan/Haenlein 2010: 61).

Olsen/Hermsmeyer (2008) use software terminology to define the relationship between digital media and wine companies: 'Wine 1.0' is used to refer to those wine companies which use the Internet traditionally, that is to say by using websites to give background details and information on the winery, its products, its contacts, and, in some cases, to sell online. These websites are not interactive and do not include customers' comments and reviews. Conversely, 'Wine 2.0' refers to those wine companies which use the Internet interactively, to establish a contact with customers. To reach this aim, they use social networking sites, blogs, video-sites and other user-generated content tools.

Social media and social networking sites have significantly affected the branding of wine firms which depend on a high level of reputation credibility among potential consumers and for which searching for information is part of the consumption experience (Galati et al. 2017: 41; Capitello et al. 2014: 129). Consumers seek advice from experts and recommendations from peers, friends and acquaintances before purchasing and consuming a wine (Nosi 2009; Storchmann 2011); furthermore, being the consumption of wine associated to an emotional experience, consumers are also willing to share their opinions with others (Szolnoki et al. 2014). For this reason, social media have become increasingly important to seek and deliver wine feedback (Szolnoki / Thach / Kolb 2016: 4).

Several studies have been conducted on social media, digital marketing and the wine industry. Some authors (Szolnoki / Taits / Nagel / Fortunato 2014) have studied the use of social media tools by some wineries based in Germany to assess the impact of Facebook membership on customers; Pucci et al. (2019) have focused on the relationship between social media usage by consumers and the intention to buy wine online. Other authors (Begalli / Codurri / Gaeta 2009) have focused on the strategic web marketing models utilized by Italian specialty wineries with attention to the entrepreneur's perception of website quality identifiable in navigability parameters. Further research (Capitello / Agnoli / Begalli / Codurri 2014) has been conducted on the evaluation of the impact of web marketing strategies on online brand visibility and image, as well as on the potential of m-commerce (mobile commerce) combined with social media for the wine industry in order to reach distinctive customer segments (Pelet/ Lecat 2014). Social media marketing capability has also been investigated (Drummond / O' Tool / McGrath 2020) by focusing on the four layers it is constituted of (connect, engage, co-ordinate, and collaborate) and their respective digital engagement strategies.

To my knowledge, no research has been conducted on the interactive and interactional resources used by wine companies to promote and sell their products on Facebook. For this reason, this paper will focus on the relationship between social media and wine advertising by identifying the linguistic resources used by wine companies to inform, advertise, engage and keep in contact with their Facebook followers.

3. Metadiscourse

The term ‘metadiscourse’ refers to an approach used to conceptualize interaction between text producers and their texts and between text producers and their users (Hyland 2005: 1). The starting assumption is that communication cannot be interpreted only as an exchange of information but should also be understood as an interaction of personalities, attitudes, and assumptions and as mutual acts of comprehension and involvement (Hyland 2005: 3-4). These interactions and mutual acts of comprehension and involvement are achieved through a set of linguistic strategies that can be interactive or interactional (see Table 1).

CATEGORY	*Function*	*Examples*
INTERACTIVE	*Help to guide the reader through the text*	*Resources*
TRANSITION MARKERS FRAME MARKERS ENDOPHORIC MARKERS EVIDENTIALS CODE GLOSSES	express relations between main clauses; refer to discourse acts, sequences or stages; refer to information in other parts of the text; refer to information from other texts; elaborate propositional meaning	in addition; but; thus; and finally; to conclude; my purpose is; noted above; see Fig.; in section 2; according to X; Z states; namely; e.g.; such as; in other words.
INTERACTIONAL	*Make author’s view explicit and involve the reader in the text*	*Resources*
HEDGES BOOSTERS ATTITUDE MARKERS SELF MENTION ENGAGEMENT MARKERS	withhold commitment and open dialogue; emphasize certainty or close dialogue; express writer’s attitude to proposition; explicit reference to author(s); explicitly build relationship with reader	Might; perhaps; possible; about; in fact; definitely; it is clear that; unfortunately; I agree; surprisingly; I; we; my; me; our; consider; note; you can see that

Table 1. An interpersonal model of metadiscourse (adapted from Hyland 2005: 49).

As can be seen in Table 1, Hyland's model of metadiscourse includes interactive and interactional linguistic features:

- Interactive features are constituted of text-organising items whose function is that of clarifying and explaining. Furthermore, as Masi suggests (2013: 315), these items conform to readers' expectations about how a text should be structured in a given socio-rhetorical context;
- Interactional features group those items which are used by authors to make their view explicit and to involve readers. These features are evaluative and engaging and conform to readers' expectations about relevant tenor strategies in a given socio-rhetorical context (Masi 2013: 317).

Interactive features can be divided into five broad categories:

1. Transition markers: they are conjunctions and adverbial phrases used in a text to create connections between ideas and make parts of the text clearer to the readers. They can be additive (*and, furthermore, moreover, by the way*, etc.), comparative (*similarly, likewise, equally, in the same way, correspondingly*, etc.), consequential (*thus, therefore, consequently, in conclusion*, etc.), or contrastive (*admittedly, nevertheless, anyway, in any case, of course*);
2. Frame markers: these items sequence parts of the text (*first, then, 1/2, a/b, at the same time, next*), label text stages (*to summarize, in sum, by way of introduction*), announce discourse goals (*I argue here, my purpose is, the paper proposes, I hope to persuade, there are several reasons why*), or indicate topic shifts (*well, right, OK, now, let us return to*);
3. Endophoric markers: they are expressions referring to other parts of the text with the function of facilitating comprehension to the reader (e.g. *see Figure 2, refer to the next section, as noted above*);
4. Evidentials: they are linguistic items indicating the source of information, used to guide the reader's interpretation and establish an authorial command on the subject (*according to,*

Hyland's model). They indicate who is responsible for a position or a statement;
5. Code glosses: they are items and expressions which provide additional information by rephrasing, explaining or elaborating (*this is called, in other words, that is, this can be defined as, for example*, etc.).

Five broad categories can also be identified for interactional features:

1. Hedges: they are those devices that indicate the subjectivity of a position, thus opening that position to negotiation. Examples are *among the others*, *possible*, *might* and *perhaps*;
2. Boosters: differently from hedges, these items are used to close down alternatives and to emphasize certainty. Some examples are *clearly*, *obviously* and *demonstrate*;
3. Attitude markers: they are linguistic items indicating the writer's affective attitude to propositions, that is to say surprise, agreement, importance, obligation, frustration, and so on. They usually are attitude verbs (*agree*, *prefer*), sentence adverbs (*unfortunately*, *hopefully*), or adjectives (*appropriate*, *logical*, *remarkable*).
4. Self mention: it refers to the degree of explicit author reference in the text, expressed by first-person pronouns and possessive adjectives (*I*, *me*, *mine*, exclusive *we*, *our*, *ours*).
5. Engagement markers: these devices explicitly address the readers for two main purposes, 1. to adequately meet the readers' expectations of inclusion and solidarity by addressing them with reader pronouns (e.g. *you*, *your*, inclusive *we*) and interjections (e.g. *by the way*, *you may notice*); 2. to position the audience and to pull readers into discourse. This function is performed by questions and directives, for example imperatives such as *see*, *note* and *consider* and obligation modals such as *should*, *must*, *have to*, etc., but also by reference to shared knowledge.

3.1. Linguistic resources employed in digital media

Metadiscourse research on digital genres, particularly on academic blogs, began almost twenty years ago with works by Mortensen and Walker (2002) and Luzòn (2006, 2013). Later followed by other scholars (Yus 2015; Bondi 2018), these studies have contributed to the identification of the highly dialogic nature of this genre.

Zou/Hyland (2019), for example, examined the ways researchers construct a relationship with readers in journal articles and in academic blog posts. Journal articles are exclusively addressed to a professional audience, while blogs are usually addressed to non-expert or general readers and, for this reason, interpersonal resources are supposed to be differently organized in the two genres in order to engage readers successfully (714). The results of their analysis indicate that features such as hedges, boosters, attitude markers, self mentions, reader pronouns, and questions are much more frequent in the digital genre than in the traditional one. Biri (2018) carried out a metadiscourse and multidimensional analysis of opinion writing discussing political or societal topics in newspapers, news sites and blogs. According to results, blogs are more likely to use writer-oriented strategies (attitude markers, self mentions, transitional markers and hedges) than reader-oriented rhetoric (reader-address, questions and textual organisers) and solidarity-function (inclusive *we*). This may be interpreted as a tendency of blog authors to be more concerned with communicating their own view than with addressing the readers, speaking for themselves rather than for any group they represent (Biri 2018: 169). Conversely, news sites score high in reader- and solidarity-orientedness and seem to be more concerned with readers. They tend to engage the reader through explicit pronouns with the aim of reproducing an intimate style which is typical of online registers. This strategy represents a deviation from the style used in traditional media (Biri 2018: 171).

As regards the linguistic resources typical of social media, the work of Bianchi (2017) examines the linguistic features of Facebook interactions between travel management companies and prospective customers. Bianchi shows that Facebook posts by travel management companies display features more common to spoken communication rather than to written informal communication. Linguistic and rhetorical techniques include direct dialogue with readers, euphoria terms, reference to a magical dimension, reference to discovery and adventure, expressions of social control, ego-targeting techniques, metaphors, attempts to engage readers in immediate action and deictics. Furthermore, posts show an explicit presence of the tourism operator expressed by first-person pronouns and adjectives and a high degree of direct involvement of the reader, as suggested by second-person pronouns and adjectives and by imperative verbs and questions. Posts have all very similar contents and usually provide readers/customers with suggestions, offers, descriptions and information. Post authors frequently engage in virtual conversation and often present themselves as being on a par with their customers. Readers and their needs, tastes and feelings appear to be central in the posts and some phrases seem to be specifically used to make them feel special and great.

As seen in the previous section, the use of social media as a promotional tool in the wine industry has attracted the interest of scholars particularly in the marketing field, but very little attention has been paid to the way interactive and interactional devices have been used in the promotion of wines and wine events.

For this reason, in the following sections, two corpora containing the Facebook posts of a series of US and Australian wineries will be analysed following Hyland's framework of metadiscourse and with the help of the analytical tools provided by Corpus Linguistics.

4. Data and methodology

The two corpora considered for linguistic analysis were assembled in a period going from July 2021 to August 2021 and include all the Facebook posts published by a selection of Australian and US wineries from 1 January 2021 to 31 August 2021. The Australian

Wineries Facebook Corpus (AusWiFaC) contains 273 posts from 5 different wineries, for a total of 13,957 running words; the US Wineries Facebook Corpus (USWiFaC) includes 309 posts from 4 different wineries exclusively based in California, for a total of 12,577 running words. The reason for choosing US and Australian wineries is due to the fact that the USA and Australia rank first and second among the English-speaking wine-producing countries in the world (fourth and seventh in the list including all the countries in the world which produce wine, not only English-speaking ones). The Facebook pages included in the two corpora were identified by google searching the top wineries of each region or country. As for the contents of the posts, Australian and US wineries usually describe the products available, the tasting events organized and everything related with the activities carried out at the winery and with the people involved in these activities (for example, harvesting, checking the degree of maturation of the grapes, welcoming customers, the unfolding of seasons, and so on). Table 2 below summarizes the details on the two corpora.

CORPUS	*Number of Facebook posts*	*Number of wineries*	*Total number of words in the corpus*
AUSTRALIAN WINERIES FACEBOOK CORPUS (AUSWIFAC)	273	5	13,957
US WINERIES FACEBOOK CORPUS (USWIFAC)	309	4	12,577

Table 2. Details of the two corpora used for analysis.

The methodological approach is mainly quantitative: in order to detect the interactive and interactional resources used by winery owners in their Facebook posts, a first analysis was carried out using Text Inspector, a professional web tool that identifies metadiscourse markers. The categories used by the tool are based on the types indicated by Bax / Nakatsuhara / Waller (2019) and by Hyland (2005). All the items identified by Text Inspector and grouped into the metadiscourse categories were checked to make sure the tool had assigned them to the right group. To do this, the AusWiFaC and the USWiFaC were uploaded on Sketch Engine and the Wordlists and Concordance tools were used. As the analysis of Attitude markers did not seem to include all the eligible items in the corpus, an advanced Wordlist search was conducted: using Sketch Engine the wordlists of adjectives, adverbs, and verbs were run separately. From these lists, attitude adjectives, adverbs, and verbs were isolated and their concordances were checked to ensure they had been included in the right category. The frequency of occurrence of items was normalised and expressed in percentages calculated out of the total number of words in the corpus.

5. Analysis

As already described above, all the results of the analysis carried out by means of Text Inspector were cross-checked using the Wordlists and Concordances tools provided by SketchEngine. Items included in the different categories and subcategories of interactive and interactional resources were grouped and counted. The following sections describe separately the findings identified in the AusWiFaC and in the USWiFaC.

5.1 Interactive and interactional resources in the AusWiFaC

Among all the interactive resources available to the authors of Facebook posts, the most frequently used are Transition markers, particularly additive conjunctions, followed by consequential, temporal, and adversative conjunctions (see Table 3 below). Some examples are reported below:

(1) Share our post *and* tag friends *or* colleagues who might be interested

(2) Purchase 12 bottles *or* more from our selected ranges

(3) A backyard barbecue is a favourite Aussie pastime, *so* you want to make sure you’ve got the right equipment!

(4) When young, Vat 1 is generally a finer, more delicate Hunter Semillon style, *but* after 4-5 years it begins to show the vanillin, toasty characters of bottle age

(5) Everyone must wear a face mask *while* inside our Cellar Door

The higher frequency of additive conjunctions may suggest that contents are conveyed as short information or description; the elements and concepts described are almost never compared or contrasted with each other. Furthermore, contents are not reported as a chronological narration, as the low frequency of temporal conjunctions seems to suggest.

Frame markers occur with a very low frequency, which suggests they are resources that are rarely used in these types of Facebook posts. This could be interpreted by taking into account the type of posts which appear more frequently in the Facebook pages under analysis. Posts are usually captions of images, questions, tips, quotes, and short descriptions. All these types of posts do not require a textual organization that implies the use of sequencing, text stage indications, signaling of discourse goals or topic shifts.

On the other hand, the low frequency of Code glosses may suggest that post authors and post readers possess a high degree of shared knowledge about the topics dealt with and no additional information is needed to make contents clearer and more accessible to readers.

Conversely, the category of Endophoric markers shows a higher frequency of usage if compared to Frame markers, Evidentials and Code glosses. It mainly includes directives, which invite readers to visit a section of the winery website following the link provided (6) or just links reported at the end of the post. In some cases, links are replaced by tags, by means of which other Facebook pages can be accessed (7). These markers are slightly different from those indicated by Hyland (2005) as they do not refer to other parts of the same text, in this case, of the post. However, these markers can be said to refer to other pages which are internal to the Facebook world or to sections of the winery website which constitute the digital world around the company. For this reason, the examples of endophoric markers found in the AusWiFaC could represent a variety, which is typical of social media, of this interactive resource (see Manca/Bianchi in preparation). Other endophoric markers, which are more similar to those indicated by previous literature, are the nouns *example* and *page*.

(6) *DONT MISS OUT & Get your tickets https://bit.ly/3av2jGi*

(7) See you at the Hunter Valley Wine & Beer Festival

INTERACTIVE RESOURCES - AusWiFaC			
MACROCATEGORY	*Subcategory*	*Number of items in the AUSWiFaC*	*Percentage of occurrence in the AUSWiFaC*
TRANSITION MARKERS	Additive	447	3.2 %
	Comparative	0	0 %
	Consequential	20	0.14 %
	Adversative	13	0.09 %
	Temporal	17	0.12 %
	(Total percentage of occurrence)		*3.55 %*
FRAME MARKERS	Sequencing	3	0.02 %
	Text stages	2	0.01 %
	Discourse goals	1	0.007 %
	Topic shifts	1	0.007 %
	(Total percentage of occurrence)		*0.04 %*
ENDOPHORIC MARKERS		54	0.4 %
EVIDENTIALS		7	0.05 %
CODE GLOSSES		4	0.02 %

Table 3. Interactive resources in the AusWiFaC.

To summarise, the analysis of interactive resources reveals a very low frequency of usage of frame markers, evidentials and code glosses whereas endophoric markers have a relatively high frequency. As for transition markers, only additive conjunctions show a high percentage of occurrence if compared with the items included in the other categories and subcategories. In the socio-rhetorical context of Facebook posts, readers are very likely to find short posts, mainly informative and descriptive, where noun groups or sentences are preferably connected by means of additive conjunctions. Posts do not include text stages or sequences, indications of discourse goals or topic shifts and, perhaps, due to the shared knowledge existing between authors and readers, they contain a very limited use of explicative glosses.

As to interactional resources (see Table 4 below), the AusWiFaC shows a high number of attitude markers, with adjectives occurring more frequently than adverbs and verbs.

MACROCATEGORY	*Subcategory*	*Number of items in the AusWiFaC*	*Percentage of occurrence in the AusWiFaC*
HEDGES		45	0.3 %
BOOSTERS		33	0.2 %
ATTITUDE MARKERS	Attitude verbs	107	0.8 %
	Sentence adverbs	135	1%
	Attitude adjectives	321	2.3 %
	(Total percentage of occurrence)		*4.1%*
SELF MENTION	1st person pronouns	174	1.3 %
	Possessive adjectives	312	2.2 %
	(Total percentage of occurrence)		*3.5 %*
ENGAGEMENT MARKERS	Reader pronouns	197	1.4 %
	Interjections	2	0.01 %
	Imperatives	126	0.9 %
	Questions	46	-
	(Total percentage of occurrences)		*2.3 %*

Table 4. Interactional resources in the AusWiFaC.

The most frequent attitude adjectives are *good*, *great*, *perfect*, *exclusive*, *beautiful*, *unique*, *proud*, *wonderful*, *favourite*, *delicious* and they describe the writer's affective attitude to the products, events and experiences described in the posts, as exemplified below:

(8) *Good* food, *good* wine, and *good* company, what more could you ask for?!

(9) The result is *great* tasting wine that's free from alcohol and full of flavour

(10) Quick and easy BBQ lamb and the *perfect* red wine pairing – our Black Label Red!

(11) The Vault is our premium tasting room, experiencing some of PTW's most *exclusive* wines

(12) This past weekend we basket pressed some *beautiful* Semillon from the mighty Johnno's vineyard

Adverbs expressing attitude occur with a frequency of 1% and are *only*, *more*, *very*, *just*, *almost*, *arguably*, *extremely*, *certainly*, *nearly*, *approximately*, *exclusively*, *truly*, and so on. Some examples are reported below:

(13) The donation came from proceeds of our Hunter Valley Semillon, one of the *only* Hunter Valley wines that we were able to produce in 2020

(14) The parcel of land is situated on a vein of *very* old and fertile Cambrian soil which is unique to the region

(15) An *almost* perfect growing season was experienced for the 2014 vintage, one of the best in recent memory

(16) It is predominantly sourced from the Short Flat Vineyard, *arguably* one of the best vineyard sites in the Hunter Valley.

(17) The back vintage reds in this offer are *certainly* the best of the best

The most frequent attitude verb is *love* followed by *wish*, *want*, *miss*, *feel*, *appreciate* and other one-entry verbs:

(18) We *love* nothing more than seeing our wine being enjoyed at gatherings of family and friends

(19) The Founder's Club is designed for wine drinkers who *wish* to receive ready-to-drink wine of excellent quality

(20) Our Cellar Door is open for business as usual and we *want* to assure our visitors that we are following all NSW government advice

(21) We *appreciate* all of the support you have given us over the past year, and we look forward to returning to business as usual

The high percentage of occurrence of attitude markers with respect to the other interactional features may be linked to the promoting aim of a commercial Facebook page. Winery owners seem to emphasize and describe with a positive attitude everything having to do with their activity and with what they produce, with the aim of convincing customers to take advantage of sales and offers, to join tasting events and to celebrate birthdays, anniversaries and important days by drinking their wines.

The centrality of the wine-producing activity and the passion that characterizes winery owners is also visible in another metadiscursive feature, that is to say self mention. This resource is an explicit author reference in the text and is expressed by first-person pronouns and possessive adjectives, particularly with the first-person plural *we* and the possessive adjective *our*. The pronouns and possessive adjectives for the first-person singular are much less used. Some examples are reported below:

(22) *We* will be waiting for you... Stay safe

(23) Thank you to *our* lovely members for a fantastic afternoon, and *we* look forward to hosting *our* next two Harvest events next weekend and in July!

(24) *Our* winemakers are in the last stage of preparation for *our* premium Semillons to start getting bottled at the end of this month

As for engagement markers, the most frequent features are reader pronouns followed by verbs in the imperative form and by questions. The reader pronouns identified in the AusWiFaC are *you* and *your* occurring with a total percentage of 1.4%. Examples are reported below:

(25) If *you* would like the opportunity to attend our exclusive members' events, we invite *you* to join Private Bin (link below), one of the oldest wine clubs in Australia

(26) We will provide *you* with a bottle of our wine, etched glasses to keep, and locally sourced ploughman's platter boxes so *you* can make yourself comfortable on our historic winery grounds and enjoy the stunning views for as long as *you* wish

(27) Tag *your* friends & family, we appreciate *your* help getting the word out

Reader pronouns and possessive adjectives are used to address readers and involve them into discourse, thus contributing to create a strong interaction between authors/wine producers and readers/prospective clients. On the other hand, directives aim to pull readers into action by inviting them to purchase wines, to take advantage of sales and offers, to book their places at tasting events and to visit the winery and the vineyards. The most frequent verbs at the imperative form identified in the corpus are *enjoy*, *check*, *read*, *get*, *purchase*, *buy*, *receive*, *see*, *visit*, *pick*, *follow*, *try*, and *grab*, as exemplified below:

(28) *Take* a break from alcohol and *enjoy* the flavours of your favourite wine with McGuigan Zero!

(29) Members please *check* your email inbox as we are delighted to have just sent out the event calendar for the remainder of 2021

(30) *Read* our latest article on why rosé goes best with grilled corn, and *save* the recipe for your next BBQ!

(31) *Grab* a bottle from Dan's this weekend

Another resource which seems to be among the preferred strategies of post authors are questions. In the AusWiFaC, there are 46 questions. In most cases, that is to say 39 out of 46, the answer to the question is in the post itself, as a text or as an image. In only seven cases, questions are not rhetorical and readers are covertly invited to answer the question by using the comment box. Here are some examples:

(32) Hello 2021!! *New Years Day plans?* <u>Our cellar door is OPEN for tastings and sales today</u>

(33) *The key to unwinding after a long day?* <u>A glass of Black Label Shiraz and a magazine of course!</u>

(34) Dinner is on us - *will you be having red or white tonight?* (no answer in the post)

(35) *What will you be sipping as the sun sets tonight?* (no answer in the post)

As visible in Table 4, hedges and boosters are not central to these types of texts and have a low frequency. The hedges identified in the corpus are *would*, *could*, *may*, *might*, *almost*, *approximately*, *little*, *possible*, *generally*, *in general*, *perhaps*, *seems*, and *sometimes*. This group of items is slightly more frequent than the group of boosters, thus showing that emphasizing certainty is not among the main aims of post authors. Some examples of hedges and boosters are reported below:

(36) We *could* all use a bit of Samuel's grit and determination at the start of a new week - cheers!

(37) These changes will remain in place until 9th July and *may* be amended in line with NSW Government advice

(38) After the challenges of last year, this *might* be the most highly anticipated White Release we have ever had!

(39) The back vintage reds in this offer are *certainly* the best of the best

(40) See why you *should* go alcohol-free

Authors of posts in the Facebook pages of Australian wineries seem to make a frequent use of attitude markers, particularly adjectives, with the aim of describing the positive aspects and features of the products and of the events advertised and, thus, of pulling readers into a direction of agreeing with their view. Self mention, particularly expressed by the first-person plural pronoun *we* and the possessive adjective *our*, is another frequent resource. In the Facebook posts under analysis, winery owners have a high degree of visibility and use their authorial presence to provide information and give suggestions and opinions as experts. Creating a presence in a text allows writers to create a discoursal self which is tied to the authors' values and beliefs that are connected to their discipline or, in this case, to the wine producing and wine lovers' world.

Engagement markers are third in the list of preferred resources and express the aim of winery owners to include readers as discourse participants, to draw their attention and to build a relationship with them.

As noticed in the analysis above, hedges and boosters have a low frequency of occurrence in the posts selected. In the case of hedges, winery owners do not probably feel the need to show cautiousness in their statements: posts are usually direct and are characterized by the certainty that what is advertised and described is valid, positive and worth experiencing. On the other hand, boosters, which are even less frequent than hedges, may be probably underused because the main aim of posts is not expressing commitment to a statement or strengthening the owners' position but advertising the winery and its activities and products in extremely positive terms in order to convince readers to take advantage of what is offered.

5.2 Interactive and interactional resources in the USWiFaC

The analysis proceeds with the identification of interactive and interactional resources in the USWiFaC. Occurrences and percentages are summarized in Table 5 and Table 6 below.

As visible in Table 5 and as already noticed in the AusWiFaC corpus, among the transition markers available, additive conjunctions show a high preference of usage (3.9%), followed by contrastive, consequential, and temporal conjunctions. Some examples including the most frequent conjunctions for each group are reported below:

(41) Harvest is coming up quickly *and* we can't wait to test out the 2021 vintage!

(42) Are you having a glass *or* two to celebrate the occasion?

(43) You all loved our pizza weekend, *so* we've decided to bring it back!

(44) Tannins are firm *but* integrated, accenting a bright acidity throughout the finish

(45) Stop by and see these mustards *while* they're still in bloom until the end of March

Evidentials can be found in only six cases, where reference to opinions or statements of experts is made by using the verb *say* or *according to*:

(46) "Howell Mountain Cabernets are very muscular, and ours is no exception," *says* winemaker Michael Eddy

Endophoric markers occur 80 times (0.6%) and, as in the AusWiFaC, are mainly expressed by directives inviting readers to read and learn more at the link provided. Interestingly, out of the 75 expressions including a directive, in 33 cases the link is preceded by *here*, in 17 cases by *now*, and in 8 cases by *today*. Tags are less frequently used in this corpus. Examples are reported below:

(47) *Read* Brenae's full story *here*: […]

(48) *Learn more* and *book* your virtual tasting *today* [link]

(49) *Find more* details *here https://bit.ly/2O10yIu and then get in touch!*

Both frame markers and code glosses are used in only three occurrences each and have a percentage of 0.02%.

INTERACTIVE RESOURCES - USWiFaC			
MACROCATEGORY	*Subcategory*	*Number of items in the USWiFaC*	*Percentage of occurrence in the USWiFaC*
TRANSITION MARKERS	Additive	492	3.9 %
	Comparative	1	0.007 %
	Consequential	22	0.2 %
	Contrastive	22	0.2 %
	Temporal	16	0.1 %
	(Total percentage of occurrence)		*4.4 %*
FRAME MARKERS	Sequencing	1	0.007 %
	Text stages	1	0.007 %
	Discourse goals	1	0.007 %
	Topic shifts	0	0 %
	(Total percentage of occurrence)		*0.02 %*
ENDOPHORIC MARKERS		80	0.6 %
EVIDENTIALS		4	0.04 %
CODE GLOSSES		3	0.02 %

Table 5. Interactive resources in the USWiFaC.

Results from the analysis show a similar tendency to the one identified in the AusWiFaC. There is a very low frequency of usage of frame markers, evidentials and code glosses, and additive conjunctions are the most frequently used subcategory of Transition markers. Endophoric markers follow, in terms of frequency of usage, transition markers and are an example of the hypertextual interactivity of posts.
These frequencies may, again, be explained considering the nature of Facebook posts, that is to say the fact that they are mainly captions to pictures, questions, direct invitations and very short descriptions. For this reason, posts do not include text stages or sequences, indications of discourse goals or topic shifts and limit clarifying glosses.

Attitude markers are the interactional resource that shows the highest percentage of occurrence (4.6%). Attitude adjectives precede, in terms of percentage, sentence adverbs and attitude verbs. Some examples of the most frequent adjectives are reported below:

(50) We're ringing in 2021 with *good* wine and *good* vibes only

(51) Follow the yellow brick road to your *favorite* Sonoma Valley winery!

(52) Linguine with clams is the *perfect* dish to pair with our 2018 Chardonnay

(53) A birthday trip to Napa Valley for *great* wine and *great* company

(54) Paired with a *special* selection of small-lot wines, this promises to be a memorably *mouthwatering* experience

Adverbs expressing attitude occur with a frequency of 1.3% and are *only*, *most*, *very*, *just*, *more*, *beautifully*, *incredibly*, *simply*, *especially*, *carefully*, *truly*, and so on. Here follow some examples:

(55) Rich textures and the salinity of the pecorino cheese *beautifully* contrast the dark fruit notes of our full-bodied Cabernets

(56) We are *incredibly* proud to have strong female leadership across all areas of the business here

(57) A new year is always case for revelry, but this year seems *especially* welcome

(58) Our Cellar No. 254 Meritage is made from *carefully* selected Napa Valley grapes

As in the AusWiFaC, *love* is the most frequent attitude verb followed by *need*, *like*, *want*, *remember*, *hope*, *miss* and so on:

(59) We *love* seeing our Chardonnay paired with magnificent international cuisine!
(60) Sometimes all you *need* is fresh air, simple bites, and a Napa wine
(61) Our renovated tasting room is finished and we *want* to share it with the world!
(62) We certainly *miss* this great event and hope to return next year!

Self mention and engagement markers are used with the same percentage (3.4 %, which however does not include the occurrence of the subcategory of questions of engagement markers), showing a balance between authorial presence and readers' involvement. Self mention is expressed by the personal pronoun *we* and the possessive adjective *our*, while there are only seven occurrences of the first-person singular pronoun *I*:

(63) *We* are proud to farm our land sustainably and organically
(64) *We* look forward to hosting you safely
(65) This Saturday, *we*'re very excited to showcase *our* Cellar No. 254 wines paired with hand-made chocolate from Woodhouse Chocolate

Second-person pronoun *you* and the possessive adjective *your* are the engagement marker devices which occur with the highest frequency (2.3%).

(66) Bring *your* beloved pooch and join us on Saturday, May 22nd for another Vineyard Dog Walk!
(67) Bring a truly unique piece home with *you*, or simply browse and enjoy a glass of wine

As for directives, the most frequent verbs at the imperative form are *join*, *enjoy*, *make*, *learn*, *reserve*, *grab*, *shop*, *raise*, *listen*, *book*, *bring*, *get*, *find*, *save*, and so on:

(68) *Make* a reservation and *bring your* besties for a Napa getaway!
(69) *Learn* more and *book your* virtual tasting today
(70) *Grab* a large pour of *your* favorite and *rock out* to our wine themed playlist

(71) *Raise* a glass of *your* favorite white wine and cheers!

Questions are included in the engagement markers category and can also be considered one of the preferred strategies to keep readers engaged and involved. In the USWiFaC, there are 64 questions, almost 20 questions more than in the AusWiFaC. What is interesting is that in 30 cases out of 64, the answer to the question is not in the post itself, as a text or as an image, and readers are indirectly invited to answer the question by using the comment box. Here are some examples:

(72) A dreamy setting for your journey through wine. *Will you join us*? (no answer in the post)

(73) A romantic trip to Napa Valley isn't complete without a little wine tasting. *Have you booked your experience with us*? (no answer in the post)

(74) Setting the stage for a weekend of wine tasting. *Who would you bring to your tasting reservation*? (no answer in the post)

(75) *Have you tried our 2018 Napa Valley Cabernet Sauvignon*? <u>In this short video, winemaker Michael Eddy sheds light on our 93-point* Cabernet and explains why he's so fond of the 2018 vintage</u>

(76) *What's the first step in grilling the perfect steak*? <u>Decanting your Cabernet, of course</u>

As already observed in the AusWiFaC, hedges and boosters are not relevant in Facebook posts and show a very low frequency. The hedges identified in the corpus are *would*, *almost*, *could*, *perhaps*, *seems*, and other one-entry items while the most frequent boosters are *always*, *sure*, *definitely* and the verb *know*. Some examples of hedges and boosters are reported below:

(77) Corks soaking in the lab can *only* mean one thing - bottling is *almost* here!

(78) We *could* get used to this view. Can you recognize each wine from their tops?

(79) There's *perhaps* no pairing more iconic than a perfectly grilled steak with a glass of rich, complex Cabernet Sauvignon

(80) Sip some wine and savor the day at our dog-friendly winery. It's *always* a party when they're in the mix!

INTERACTIONAL RESOURCES - USWiFaC			
MACROCATEGORY	*Subcategory*	*Number of items in the USWiFaC*	*Percentage of occurrence in the USWiFaC*
HEDGES		35	0.3 %
BOOSTERS		42	0.3 %
ATTITUDE MARKERS	Attitude verbs	91	0.7 %
	Sentence adverbs	168	1.3 %
	Attitude adjectives	333	2.6 %
	(Total percentage of occurrence)		*4.6%*
SELF MENTION	1st person pronouns	172	1.4 %
	Possessive adjectives	248	2 %
	(Total percentage of occurrence)		*3.4%*
ENGAGEMENT MARKERS	Reader pronouns	292	2.3 %
	Interjections	0	0 %
	Imperatives	144	1.1 %
	Questions	64	-
	(Total percentage of occurrence)		*3.4 %*

Table 6. Interactional resources in the USWiFaC.

In conclusion, it appears that attitude markers and the subcategory of attitude adjectives, verbs and sentence adverbs are the most frequently used resource in the Facebook posts in the USWiFaC. The tendency to establish a relationship with readers by expressing attitudes is also visible in the resources of self mention and engagement markers. Self-mention resources, particularly expressed by the first-person plural pronoun and the possessive adjective *our*, make authors visible and signal them as experts in the wine producing and wine drinking world.

Engagement markers aim to include readers as discourse participants and to keep readers' attention always focused on what is advertised. As already noticed in the AusWiFaC, hedges and boosters do not occur very frequently, probably because the content of posts does not require expressing cautiousness in statements. On the other hand, boosters may not be used because the certainty of a statement might be considered as implicit due to the strong presence of authorial voice and stance.

6. Conclusion

The current paper has described eight months of Facebook posts by nine wine companies based in Australia and in California (USA). The posts were analysed in their metadiscursive resources with the help of Corpus Linguistics methods in order to identify the linguistic features of Facebook promotion and the influence of cultural factors on the linguistic strategies used.

Results show that Australian and US wineries tend to communicate through Facebook in a very similar way.

The most frequent interactive feature used by both groups is represented by transition markers, in particular additive conjunctions which occur with a frequency of 3.2% in the AusWiFaC and of 3.9% in the USWiFaC. This occurrence may be interpreted by considering the way Facebook posts are organized as a message. They are very short texts characterized by simple descriptions or brief information, questions or directives and the different parts of these texts are usually connected by additive conjunctions. For this reason, texts appear linear, easily accessible to the reader, highly dialogic and informal. The nature of Facebook posts may also be the key to interpreting the low frequency of frame markers (0.04% in the AusWiFaC and 0.02% in the USWiFaC): text stages or sequences, indications of discourse goals or topic shifts are not needed here and their presence could add complexity to a post that should be read quickly by Facebook users when scrolling down the newsfeed page. Furthermore, the shared knowledge existing between authors and readers of posts may be the reason why posts contain very few evidentials (0.05% in the AusWiFac and 0.04% in the USWiFaC), and code glosses (0.02% in both corpora). As for endophoric markers (0.4% in the AusWiFac and 0.6% in the USWiFaC), links and tags redirect readers to pages or website sections where more details on what is described in the post can be obtained or where readers can actually perform the directive included in the post, for example, shopping online or making a reservation. For this reason, links and tags could be seen as the digital version of traditional endophoric markers.

As for interactional resources, attitude markers (4.1% in the AusWiFaC and 4.6% in the USWiFaC), self mention (3.5% in the AusWiFaC and 3.4% in the USWiFaC) and engagement markers (2.3% in the AusWiFaC and 3.4% in the USWiFaC) are the most used linguistic devices in both corpora. As Zou / Hyland (2018) notice, in research papers the credibility of the writer is constructed through adherence to norms of authorial reticence and explicit affect is avoided. Conversely, in the case of Facebook posts, authors seem to establish their credibility by explicitly conveying and describing their attitude towards what is advertised or communicated in the post. As mentioned above, self mention signals the presence of authors thus allowing them to speak directly to readers. Furthermore, it is used to expresses informality, a sense of proximity and the perception of sharing ideas between writers and readers (Zou / Hyland 2018). This allows authors to encourage trust in readers, an element that is fundamental in the advertising process. Engagement markers have a higher percentage of occurrence in the USWiFaC (1.1% more than the AusWiFaC), where conversational intimacy and proximity with readers seem to be more emphasized. As already noticed, in the USWiFaC, there are almost 20 questions more than in the AusWiFaC (46 in the AusWiFaC and 64 in the USWiFaC) thus confirming this tendency towards a face-to-face type of discourse interaction.

The high similarity of usage of metadiscourse linguistic resources in both corpora and the evidence of a tendency that is in line with previous studies on Facebook linguistic strategies (see Bianchi 2017) may suggest that Facebook posts have some general features which do not seem to be influenced by cultural factors. Facebook posts advertising products and services are usually short posts which provide simple but highly positive descriptions and information and which often include direct invitations to take advantage of what is described and proposed, and rhetorical and non-rhetorical questions which act as a way to convince readers to take action or to make them feel as an important part of the community.

The limits of this study are evident, in that corpora of bigger size would be needed to generalize on the results achieved. Furthermore, for a deeper analysis of the relationship between Facebook linguistic devices and cultural factors, the Facebook posts of wineries from other English-speaking countries should also be investigated and compared.

Nevertheless, the results described in the current paper may be considered as a useful starting point for a more detailed mapping of the linguistic features of Facebook interactions in posts advertising products, services and activities.

References

Bax, Stephen / Nakatsuhara, Fumiyo / Waller, Daniel 2019. Researching L2 Writers' Use of Metadiscourse Markers at Intermediate and Advanced Levels. *System*, 83, 79-95.

Begalli, Diego / Codurri, Stefano / Gaeta, Davide 2009. Wine and Web Marketing Strategies: The Case Study of Italian Speciality Wineries. *British Food Journal*, 111/6, 598-619.

Bianchi, Francesca 2017. The Social Tricks of Advertising. Discourse Strategies of English-Speaking Tour Operators on Facebook. *Iperstoria* 10, 3-32.

Biri, Ylva 2018. Addressing and Acknowledging Readers and Writers. Exploring Metadiscourse in Opinion Writing Online, *Journal Półrocznik Językoznawczy Tertium* 3/1, 153-177.

Bondi, Marina 2018. Try to Prove Me Wrong: Dialogicity and Audience Involvement in Economics Blogs. *Discourse, Context and Media* 24, 33-42.

Capitello, Roberta / Agnoli, Lara / Begalli, Diego / Codurri, Stefano 2014. Social Media Strategies and Corporate Brand Visibility in the Wine Industry: Lessons from an Italian Case Study. *EuroMed Journal of Business* 9/2, 129-148.

Drummond, Conor / O'Toole, Thomas / McGrath, Helen 2020. Digital Engagement Strategies and Tactics in Social Media Marketing. *European Journal of Marketing* 54/6, 1247-1280.

Galati, Antonino / Crescimanno, Maria / Tinervia, Salvatore / Fagnani Francesco 2017. Social Media as a Strategic Marketing Tool in the Sicilian Wine Industry: Evidence from Facebook. *Wine Economics and Policy* 6/1, 40-47.

Olsen, Janeen / Hermsmeyer, Josh 2008. Direct Wine Sales and Wine 2.0. In Thach Liz / Matz Tim (eds) *Wine: A Global Business*, New York, NY: Miranda Press, 114-119.

Hyland, Ken 2005. *Metadiscourse. Exploring Interaction in Writing*. London: Continuum.

Ibeh, Kevin / Luo, Ying / Dinnie, Keith 2005. E-Branding Strategies of Internet Companies: Some Preliminary Insights from the UK. *Journal of Brand Management* 12/5, 355-359.

Kaplan, Andreas / Haenlein, Michael 2010. Users of the World, Unite! The Challenges and Opportunities of Social Media. *Business Horizons* 53(1), 59-68.

Karjaluoto, Heikki / Hänninen, Nora / Ulkuniemi, Pauliina 2015. The Role of Digital Channels in Industrial Marketing Communications. *Journal of Business & Industrial Marketing* 30, 703-710.

Luzón, María José 2006. Research Group-Blogs: Sites for Self-Presentation and Collaboration. In Neumann, Peter / Pló, Ramón / Pérez-Llantada, Carmen (eds) *Proceedings of the 5th International AELFE Conference*. Zaragoza: Prensas Universitarias, 629-634.

Luzón, María José 2013. Public Communication of Science in Blogs: Recontextualizing Scientific Discourse for a Diversified Audience. *Written Communication* 30/4, 428-457.

Masi, Silvia 2013. Metadiscourse in English and Italian: An Analysis of Popular Scientific Discourse Online. In Kermas, Susan / Christiansen, Thomas (eds) *The Popularization of Specialized*

Discourse and Knowledge across Communities and Cultures, Bari: Edipuglia, 315-329.

Mortensen, Torill / Walker, Jill 2002. Blogging Thoughts: Personal Publication as an Online Research Tool. In Morrison, Andrew (ed) *Researching ICTs in Context*, Oslo: InterMedia Report, 249-279.

Nosi, Costanza 2009. The Aussie Value Innovation: How Australia Escaped the Red Queen of the Global Wine Business. *Mercati e competitività* 4, 45-70.

Pelet, Jean-Eric / Lecat, Benoit 2014. Smartphones and Wine Consumers: A Study of Gen-Y. *International Journal of Wine Business Research* 26/3, 188-207.

Pucci, Tommaso / Casprini, Elena / Nosi, Costanza / Zanni, Lorenzo 2019. Does Social Media Usage Affect Online Purchasing Intention for Wine? The Moderating Role of Subjective and Objective Knowledge. *British Food Journal* 121/2, 275-288.

Storchmann, Karl 2011. Wine Economics: Emergence, Developments, Topics, *Agrekon* 50/3, 1-28.

Szolnoki, Gergely / Taits, Dimitri / Nagel, Moritz / Fortunato, Alessio 2014. Using Social Media in the Wine Business: An Exploratory Study from Germany. *International Journal of Wine Business Research* 26/2, 80-96.

Szolnoki Gergely / Thach, Liz / Kolb, Dani 2016, *Successful Social Media and Ecommerce Strategies in the Wine Industry*. New York: Palgrave Macmillan.

Yus, Francisco 2015. Interactions with Readers through Online Specialized Genres: Specificity or Adaptability? In Gil-Salom, Luz / Soler-Monreal, Carmen (eds) *Dialogicity in Written Specialised Genres*. Amsterdam: John Benjamins, 189-208.

Zou, Hang / Hyland, Ken 2019. Reworking Research: Interactions in Academic Articles and Blogs. *Discourse Studies* 21/6, 713-733.

GIROLAMO TESSUTO

Medicine and biology science communication blogs: Investigating stance patterns for gender identity construction

1. Introduction

At a time when Web 2.0 environments have evolved for collaborative frameworks (Garzone et al. 2007; Garzone 2020; Herring et al. 2013) and the popularity of blogs as a genre (Herring et al. 2005; Myers 2010) has ramped up across the board, the multifunctional nature and use of blogging in diverse fields have made it extremely easy for anyone to personalise content by building communities of practice worldwide around their blog niches. Just as blogs determine the style of writing and method of communicating relevant information in the public sphere through multisemiotic elements, so too they lean heavily on the evaluative and dialogic features of language use across diverse fields (Myers 2010; Bondi/Diani 2015; Tessuto 2015; Bondi 2018; Tessuto 2020a, 2020b, 2022). When it comes to the take-up of blogging in wider academic science communication, utilization of these linguistic and discoursal features becomes material to how bloggers frame ideas, beliefs, attitudes, and positions in a rhetorical event such as in argumentative-styled blogs, and the ways they are reflective of an ideology or value system in writer-reader interaction. At the same time, this usage allows for rhetorically persuasive patterns of interactions to support *visual cultures of science* (Pauwels 2006) involved in today's scientific communication blogging practices for knowledge building and, interestingly, provides an influential source of gender representation in this alternative form of academic communication and scientific research output.

Language and gender studies have been consistently developed since their inception (Lakoff 1975), with their theoretical and methodological perspectives drawing upon diverse disciplines. In this kind of research, the notion of gender comes through as a dynamic performance, signifying that gender "is continually produced, reproduced, and indeed changed through people's performance of gendered acts, as they project their own claimed gendered identities" (Eckert/McConnell-Ginet 2003: 4). Being essentially context-dependent in a variety of social practices, this flexible process of 'gendering' bears upon different facets of the individual's social identity including linguistic behaviours enacted by the social-cultural factors of male-female differences that frame gender (Butler 2007; Cameron 2009). Not only this, but this process also allows for male and female social categories to draw together the discourse of authority and power in the construal of their social and professional identities (Wodak 1995; Mullany 2007). Under these terms, the idea of enacting social and gender identities in a variety of contexts brings discursive styles much closer to norms and stereotypes of masculinity (McElhinny 1995) or femininity (Mullany 2007), and carries over to the principal instrument and effect of gendered order, relations, and practices that are culturally and experientially relevant in context-dependant language.

Quite apart from these social constructionist approaches to gender, however, different studies have also addressed the potential influence of gender differences in academic writing. So, in addition to gender schematic information being a significant aspect of social identity building (Yaeger-Dror 1998), studies reveal, for instance, that men and women are more similar than different in their argumentative writing style (Robson et al. 2002; Seyyedrezaie/Vahedi 2017), except for epistemic, deontic, or native language features (Seyyedrezaie/Vahedi 2017). Other studies suggest that women are more inclined to employ hedging devices in university student (Dousti/Eslami 2016) or article writing (Mirzapour 2016), with males using the first person plural pronoun more than women (Mirzapour 2016). Still, others claim that boosters (such as amplifiers and intensifiers) are far more frequently employed by male than female writers of computer conference (Fahy 2002) or articles (Yeganeh/Ghoreyshi 2015), or that different strategies for tying writer with reader at the level of text are used by male and female writers alike, or even that metadiscourse is an important tool for gender as well as disciplinary variation in book reviews across different fields (Tse/Hyland 2006; D'Angelo 2008). So, while gender remains an important variable in this kind of research, web-mediated communication is no less significant to provide a rich source of gender disparity, allowing for a predominantly male (Shema et al. 2012) or female digital content (Brenner 2012) to reap its benefits, or suggesting that gender may also play a role in content and decisions related to blogging practices (Fallows 2005; Pedersen/Macafee 2007).

Now that evaluative language provides a principled way of understanding how interactional meanings are produced in academic science blogging and gender identity reflected in discipline-specific rhetorical practices, further opportunities arise from the need to investigate gender-favoured treatment of language that, to the best of this author's knowledge, is still largely missing from the science blog research landscape. In an attempt to bridge this gap, this study sets out to describe and interpret how evaluative stance-making linguistic features and gender identities go side by side in disciplinary blogs dedicated to 'hard' science research-related content and dissemination. Such features are approached from the perspective of information, text, and genre. To this end, the study is guided by two interrelated research questions:

> RQ1: How do evaluative stance features used by male and female writers compare in the open format of academic science blogging and disciplinary practices?
>
> RQ2: How do evaluative stance-making meanings and resources allow male and female bloggers to articulate particular aspects of their academic and disciplinary identities and roles by revealing where they stand on the issues they discuss and orienting to immediate social and communicative situations?

Prior to presenting and discussing the main results related to my research aims, I will first outline the empirical material and research method employed.

2. Material and Method

2.1. Corpus data

The empirical data source for this study came from a randomized corpus of social media texts from 100 blog posts on medicine and biology 'hard' disciplines sanctioned by the UK-based BioMed Central (BMC) publishing platform and collected over a five-year period (2015-2020).[1] As part of Springer Nature, BMC describes itself as a large open access science publisher that produces several dozen open peer review journals across the 'social science' and 'hard' disciplines, including all branches of medicine and nursing, physiology, biochemistry, biology, genomics, and ecology ('About BMC' page). A total of 50 single-authored posts were obtained from each category of 'BMC Blog Network' – namely, *On Medicine* blog and *On Biology* blog, both covering the most significant research published across flagship open access journals (*BMC Medicine* and *BMC Biology*). The sampled corpora were compiled in equal numbers according to gender combinations, namely, twenty-five posts written by male authors and twenty-five by female authors in each disciplinary blog, again totaling 50 authored blogs in both corpora.

Standing alongside these gender combinations are the academic or professional credentials of blog authors and the style of blog writing. In the former, all of the posts were written by internationally-dispersed male or female authors who were either part of BMC staff editors, or held academic or practitioner roles in the disciplines, so that the bloggers' profile carried the author's name over the platform

1 On Biology blogs and On Medicine blogs available from <http://blogs.biomedcentral.com/about/>

and spiced up the text with his or her institutional position and research interests at the top, whether or not with a small colour photo headshot running alongside multimedia content. In the latter, the emphasis on ‘research’ makes it clear from the outset that sampled blog posts take the form of short essay-styled commentaries on scientific findings published across those journals upon which bloggers essentially argued from their own perspectives and contributed in the public arena well outside informal exchanges. In this way, sampled posts can be thought of as a means of distributing scientific content and sparking discussion with the academia and others, thus having the role of a mediating instrument between the wider audience of peers and public (Butler 2005).

Sampled posts were retrieved and downloaded from the chosen database and subsequently converted into text format. The WordSmith retrieval system (Scott 2015) was then used to compute different quantitative data of the posts in text-based entries alone, leaving out structure-wise features in blog posts. The overall data source for this study was a 79,884-word corpus of representative texts posted by the open access science publisher (Table 1), with the medicine corpora size being virtually identical with that of the biology corpora.

DISCIPLINE	*Total tokens*	*Total sentences*	*Total mean (in words)*	*Mean length per text*
ON MEDICINE BLOG	39,653	1,667	23.79	793.06
ON BIOLOGY BLOG	40,231	1,605	25.07	804.62
COMBINED	79,884	3,272	24,41	798,84

Table 1. Quantitative data of medicine and biology blog posts collected from BMC Blog Network website through Word Smith Tools 6.0 (Scott 2015).

2.2. Analytical procedure

To account for the qualitative and quantitative analysis of gender-typed evaluative language features of blog posts in the ongoing corpus, reference was made to Hyland’s (2005a) taxonomy of interactional stance markers in academic discourse – namely, *hedges*, *boosters*, *attitude markers*, and *self-mentions*.[2] Stance taking here recognizes "an attitudinal dimension and includes features which refer to the ways writers present themselves and convey their judgements, opinions, and commitments" alongside "the ways that writers intrude to stamp their personal authority onto their arguments or step back and disguise their involvement" (Hyland 2005a: 176). Just as these stance-taking resources "have a dialogic purpose in that they refer to, anticipate, or otherwise take up the actual or anticipated voices and positions of potential readers" (Hyland 2005a: 176, after Bakhtin 1986), so too they become relevant for the broadest sense of identity, defined as "the ways that people display who they are to each other" (Benwell/Stokoe 2006: 6). Together these broad evaluative resources were taken to determine the subjective presence of bloggers in texts as they adopt stances in relation to both the topics and findings they present and discuss in open access research publishing, thus providing a measure of the gender and discipline constructed for the bloggers' academic identity in this digital genre. Using MonoConc Pro, a text analysis and concordance programme, all the text-based entries of posts were analysed for their stance-performing functions and frequencies, and were integrated with grammatical and evaluative *that*-clause structures to fine-tune the blogger's strategy for an affective stance (Biber et al. 1999; Biber 2006; Hyland/Tse 2005). Electronically searched lexical items relied primarily on Hyland's (1998, 2005b) list of keywords for such interactional features and were supplemented by other keywords showing these macro-functions.

2 Emphasis on these features draws together a number of 'evaluation' analytical methods dealt with elsewhere via academic discourse, such as those coming under the headings of *evaluative orientations* (Lemke 1998), *evaluation* (Hunston/Thompson 2000; Bednarek 2006), *stance* (Conrad/Biber 2000; Hyland 2005a; Biber 2006; Hyland 2009), *metadiscourse* (Hyland/Tse 2004; Hyland 2005b), and *appraisal* (Martin/White 2005). These methods claim as much ground as possible for their chosen object of inquiry.

3. Analysis and Discussion

3.1. Stance features by frequency: overall corpus findings

Analysis of the corpus indicates the significance and role of evaluative stance features in the research-focused commentary genre, with roughly 3,372 instances overall being signaled almost once every twenty-five words (Table 2).

FEATURE	*n.*	%
HEDGES	1,513	45
BOOSTERS	864	26
ATTITUDE MARKERS	627	19
SELF-MENTIONS	368	10
TOTAL	3,372	100

Table 2. Frequency of stance features in medicine and biology blog posts.

The frequency counts in Table 2 show that hedges are by far the most common interactional resources in the sample, accounting for almost half of the total devices in the corpus (45%), and are followed by interactional boosters (26%), attitude markers (21%), and self-mentions (10%) along the way. On the whole, the importance of creating an evaluative cooperative context through these interactional forms comes closer to the frequency of interactional stance features realized in the legal (Tessuto 2015: 92-93) or medicine blog genre (Tessuto 2020a: 238), where evaluative items help writers connect their texts with their disciplines for persuasive goals. This context also, however, tells us something about the text meanings and discourse functions served across discipline-approved writing practices, such as the research article genre (Hyland 2005a, 2005b, 2010), although intuitively the narrow space constraints of the genre in the current corpus can only allow the blog writers to present more succinct arguments and claims than the writers of the research article genre presenting more extensive arguments through such evaluative forms. In other words, these interactional evaluative resources are recontextualized by the blog writers within the existing digital genre, which facilitates a very different form of academic writing to traditional research article writing where interactional language is bound by disciplinary conventions of the scholarly community.

3.2. Stance features by discipline: overall corpus findings

Yet, the analysis of evaluative stance features in the current corpus also reveals some differences between the two disciplines. Table 3 shows that the medicine sub-corpus uses slightly more stance features overall (1,737 occurrences), providing a slightly unstable pattern when discipline is taken into consideration. Despite this, data indicate again that all bloggers are concerned with a shared purpose of evaluating some claim or proposition from the community's bodies of knowledge.

FEATURE	*Medicine*		*Biology*	
	n.	*%*	*n.*	*%*
HEDGES	642	37	871	53
BOOSTERS	520	30	344	21
ATTITUDE MARKERS	397	23	230	14
SELF-MENTIONS	178	10	190	12
TOTAL	1,737	100	1,635	100

Table 3. Frequency of stance features in the blog corpus by discipline.

If we look more closely at stance frequencies by discipline in Table 3, we will see overall that medical bloggers tend to make a fairly balanced use of hedges (37%) and boosters (30%), accounting for around a third each, followed by a fairly large proportion of attitude markers (23%) and a small portion of self-mentions (10%) along the way. Biology bloggers, on the other hand, tend to make far more use of hedges (53%) than boosters (21%), attitude markers (14%), or self-mentions (12%), suggesting how disciplinary culture may differentially affect the bloggers' evaluation of factivity in their medicine or biology posts. In both cases, the primacy of evidentiality hedges over other resources exemplifies the bloggers' need to weight the expression of their commitment depending on how they qualify the epistemic value of their statements and to pragmatically position writer-reader relations. It can also be seen from the Table that, except for biology bloggers choosing to intrude slightly more into their text by self-mentions (12%), medicine bloggers are more willing than biology fellows to tone up their claims for their readers by boosters (30%) or to express their affective dimension towards topics and readers by the lexical selection of attitude markers (21%).

So, while these rhetorical resources square with the writers' epistemological and disciplinary orientation to blogging about specific 'hard' science topics and negotiate social relations, they do point to the realities of variation operating at a highly contextual level as bloggers can employ evaluations on any occasion of use in the unfolding text by relating independent beliefs to shared experience.

3.3. Gender-linked use of stance features

The ways in which evaluative stance features consciously work for the rhetoric of both disciplines in the genre can also be seen by the gender preferences for these linguistic features. Table 4 presents the gender distribution of these resources in the male and female corpus, each comprising 50 posts in both disciplines.

	Medicine & Biology: 50 posts		*Medicine & Biology: 50 posts*	
GENDER	MALES		FEMALES	
	n.	*%*	*n.*	*%*
HEDGES	689	40	824	51
BOOSTERS	498	28	366	23
ATTITUDE MARKERS	376	21	251	15
SELF-MENTIONS	192	11	176	11
TOTAL	1,755	100	1,617	100

Table 4. Frequency of stance features in the male and female blog corpus.

As we see from this Table, men employ slightly more evaluative stance-making features overall (1,755 occurrences) than women do (1,617 occurrences) for text meanings, suggesting that they are more likely to fill up a public space for interactionally social relationships and evaluate and position themselves and their research issues in relation to other members of their groups and the public over the Internet. The fact that men are more willing to occupy this public space than women points toward other studies where men are "more interested in information and opinion" in their interactional blogging platforms (Pedersen/Macafee 2007: 1481), or are given greater control over science blogging practices than women (Shema et al. 2012), thus running counter to the general claim that women use social networking sites (including microblogging) more actively than men for interactional goals (Brenner 2012).

Standing alongside these data are the measurable gender differences in the frequency of individual interactional forms used in the 50 corpus samples from both disciplines. Here, Table 4 shows that female bloggers tend to use more hedges (51%) than male bloggers (40%) writing for medicine or biology posts, while the reverse is true for boosters (28%) and attitude markers (21%) being more popular among male bloggers, leaving self-mentions to stand on an equal footing between men and women (11% – 11%). This tendency for female bloggers to produce more interactional hedges corresponds to the findings of recent studies that women make more use of such devices in their academic writing (Dousti/Eslami 2016; Mirzapour 2016), but is at odds with the significant male use of hedges found in biology (Tse/Hyland 2006) and cross-disciplinary book reviews (D'Angelo 2008). While the male-preferential use of boosters in the current study aligns with boosting strategies employed by men in other academic writing studies (Fahy 2002; Yeganeh/Ghoreyshi 2015), overall data in this study contrast with previous findings that men and women are more similar than different in their essays (Robson et al. 2002) or their article style of argument (Seyyedrezaie/Vahedi 2017).

This comprehensive picture of gender-identified differences in the male and female sub-corpus is further reinforced in Table 5, which provides a breakdown of gender results by disciplinary sub-corpus, each comprising 25 posts.

	Medicine: 25 posts		*Medicine: 25 posts*		*Biology: 25 posts*		*Biology: 25 posts*	
GENDER	MALES		FEMALES		MALES		FEMALES	
	n.	*%*	*n.*	*%*	*n.*	*%*	*n.*	*%*
HEDGES	315	37	429	53	361	40	408	51
BOOSTERS	242	28	177	22	259	28	186	23
ATTITUDE MARKERS	195	23	116	14	198	22	118	15
SELF-MENTIONS	99	12	92	11	95	10	82	11
TOTAL	851	100	814	100	913	100	794	100

Table 5. Frequency of stance features in the two gender groups by discipline.

Regardless of which discipline they open up their posts to, women are more inclined to use hedges (53% – 51%) to delimit the scope of their statements, while men are more likely to use boosters (28% – 28%) and attitude markers (23% – 22%) to reinforce their arguments and indicate their affective attitude to textual information, respectively. In all cases, men and women bloggers display generally similar frequencies in their overall usage of self-mentions. Under these terms, therefore, Table 5 illustrates that single-gendered bloggers in each discipline use stance features in pretty similar ways regardless of the discipline.

3.4. Operationalizing gender-preferential type and function of stance features in texts

We now turn to examine how different types of evaluative stance features flesh out text meanings and discourse functions in interactional blog posts, and the ways they signal particular aspects of the bloggers' gender identity and role that relate to their scientific argument and discipline and help them to accomplish their rhetorical and persuasive goals in the genre. We begin with hedges.

3.4.1. Hedges

Consistent with the gender differences identified in Tables 4 and 5 between the two disciplines, a variety of female-linked resources of stance-making hedges are mobilised across the samples. As shown in (1-4), female bloggers may see lexical devices of hedging as more suitable for their purpose of conveying caution and negotiating an interpersonal space for positions of alignment or misalignment with others. So they are able to create different rhetorical effects with readers when communicating research:

(1) The trigger for pigment alterations is still *unclear*, but drusen *appears* to have a strong relation to RPE dysfunction. [MED – female]

(2) Greater height and obesity have been *suggested* as *possible* prostate cancer risk factors, but […]. [MED – female)

(3) By extension, some individuals *may* also have gene expression patterns which *would* confer resilience to the *potential* effects of head trauma due to overly efficient DNA repair mechanisms in the brain. [BIO - female]

(4) Based on recent work conducted in collaboration with Wageningen University in The Netherlands, it *seems likely* that the introduction of badger vaccination, […]. [BIO - female]

While, as in (4) using an 'it' subject, the frequent use of hedges minimises the personal role and identity of the female blogger and highlights the phenomenon under study, all the examples reveal the women's interpretative responsibilities for the evaluation of research and the ways they help readers get behind plausible arguments within the practices and meanings of their disciplines. Of course, it is impossible to identify a single reason for every example given above, but the greater use of female-linked lexical and grammatical devices of hedging in the data may be attributable to personality factors, such as women perhaps not feeling realistically confident in their own research judgment because of the status afforded to them by some male peers, thereby allowing female bloggers to purposely control and consciously adjust their statements to avoid hostile responses in the interactional nature of science blogging. Consistent with the claim that hedges have been classified as “women’s speech” (Lakoff 1975: 19), presenting arguments with appropriate qualification and stance in the above and other examples becomes an important part of how female bloggers ‘identify themselves’ with such claims and their readers and how these claims ‘genderise’, as it were, the female bloggers’ personal and social dimensions of the research topics under discussion.

3.4.2. Boosters

At the same time, male bloggers appear to be more reliant on boosters, which allow them to stress their commitment and rule out alternative positions to their own. This can be seen in the examples below, where different kinds of boosting features allow male bloggers in single or co-authored posts to make bold statements and fully get behind their scientific claims:

(5) Our study conducted among men aged 35-64 who were employees of the London Transport Executive during the 1950s *found* that drivers had a higher risk of developing heart disease as compared to conductors. [MED – males]

(6) *I am sure* we are all well aware that having little physical movement (sedentarism) is not the best thing for our health and we *actually* do experience some unfavourable outcomes, […]. [MED – male]

(7) Already at first sight, the ventral mucus glands, which open to the pad contact surface, differ *clearly* in their morphology from the dorsal ones. [BIO – male]

(8) *We believe* that the epidemiological profile of this novel pathogen *should* be monitored as part of a ‘better’ surveillance system as there is *evidence* to suggest that […]. [BIO – males]

Not only do these male-authored posts draw readers into the research topic and promote interpersonal solidarity in the unfolding arguments, they also allow male bloggers to present the significance of their research (5), or to present broad epistemological issues or ideological assumptions of scientific progress (6-8) as part of disciplinary patterns reinforced by the use of personal pronouns. The observation that male bloggers are more inclined to confident assertions than female bloggers suggest an effort to present research written by someone who is a subject-matter expert in the academic field and who is associated with seniority practices in the academy or profession. And, indeed, many such bloggers are depicted as academic or professional experts on the blog website. So, the greater use of male-linked boosting features to present statements forcefully and evaluate material as objectively and accurately as possible allows male bloggers to specify the actual state of their knowledge on the subject, claiming credit for undisputable positions and creating a conclusive argument in scientific discourse.

3.4.3. Attitude markers

As with boosters, attitude markers tend to be more common among male bloggers overall, offering them another opportunity to deal with their judgements and evaluations in the interactional dimension. In the examples below, we see male bloggers making use of explicit attitudinal lexicon in the form of attitudinal verbs, adverb, adjectives, and nouns for positive or negative meanings, allowing them to consider something reasonable or due (*expect*), indicate difference of opinion (*disagrees*), express value, significance and importance (*effective*, *importantly*, *significant*), indicate weaknesses and shortcomings (*limitations*), or consider something hard to deal with (*difficult*) or even problematic to get on with (*issue*):

(9) In the future, we *expect* that experimentally and clinically validated mathematical models of cancer subtypes, similar to the one presented in our work, will become a *significant* part of identifying *effective* drug combination therapies […]. [MED – males]

(10) Indeed, there are *limitations* to the conclusions that can be drawn from current analyses, […]. [MED – male]

(11) *Importantly*, we identified gland clustering also in non-arboreal frog species that do not regularly climb and stick. This observation *disagrees* with the hypothesis that the toe glands are specifically adapted towards attachment. [BIO – males]

(12) In behavioral research, it is notoriously *difficult* to measure authentic human behavior in the controlled setting of a laboratory, and this makes the regulation of behavioural features a complex *issue* to tackle. [BIO – male]

As can be seen, evaluative perspectives are highlighted and enhanced through such attitudinal markers, informing the readers about the bloggers' points of view and their positions in the research texts. Not only this, but in a stance-making category of this kind we see again the need for male bloggers to professionally communicate their competence and credibility with readers as measured by their construction of a critical and persuasive dialogue. This, then, situates both the social aspects of their research and their readers.

3.4.4. Self-mentions

Lastly, male and female bloggers stand on a par with their overall usage of self-mentions realised by exclusive first-person pronouns[3], revealing that the two gender groups do not differ in how they create different roles or identities with varying degrees of authorial presence in research posts. This can be seen in the examples below, with male and female-authored posts not only appearing more personally engaging than otherwise realized through *it* or other impersonal structures seen before, but mostly exemplifying what bloggers themselves have done in their research work. And the pronominal function in (13) and (14) does help the bloggers highlight their own interpretation of a given point, announce a purpose (*we explore*) and thereafter state results/claims (*We found*) in (15), or explain a procedure in (16):

(13) Although *I* have seen no molecular evidence of AA exposure in cancers from South Asia or South America, AA-containing herbal remedies are probably still used in both areas. [MED – male]

(14) Prior to speaking to H, *my* research had led me to underestimate the effects of FD on an individual's life. [MED – female]

(15) In the current paper, *we* explore how common the innervation of the male copulatory organ is in spiders and whether […] *We* found nerves in the palpal organs of every spider species *we* investigated. [BIO – male co-authored post]

(16) To demonstrate *our* workflow, *we* sequenced DNA barcodes of >7,000 specimens of Phoridae ("scuttle flies") […]. [BIO – female co-authored post]

---

[3] As should be expected, exclusive self-mentions in the corpus add to an inclusive alternative of *we* pronoun to pull readers into the discourse (Hyland 2005a: 182, on *engagement* devices), but they were ruled out of this study on stance-taking resources.

It is quite clear that these subjective cases of exclusive pronouns are context-specific, negotiated with potential readers, and actualized in self presentations, thus being one and the same for the pragmatic purpose of the genre to provide a rhetorical space for self-presentation alongside a specific professional gender identity. Implied in these cases of subjectivities is the fact that male and female bloggers are also highlighting the relevance of their own contributions to the 'hard' fields; in other words, they create an appropriate authorial role or identity by means of self-mentions. This is essential to project an image of competence and reliability in science blogs and gain credibility in the eyes of their peer readers.

4. Conclusion

In this study, I have sought to describe and interpret how disciplinary conventions bear upon male and female rhetorical choices of stance-making resources in a corpus of medicine and biology research-commenting blog posts. On the whole, the stance frequencies in this study show that the public space of the genre writing is somewhat characterized as more 'masculine' than 'feminine', with 'masculine' blogging strategies not only helping male agents to share evaluation with a like-minded audience in an interactional dimension, but also appropriating interactional perspectives and practices that carry over into a moderately male advantage when writing science blogs. Individual stance-making resources in the data surveyed are largely variable between the two disciplines and genders, with a tendency overall for male and female bloggers to engage in rhetorical positions as they present and discuss the topics persuasively for an immediate audience and contribute to evaluations of research-focused issues from within the boundaries of their disciplinary discourse worthy of posting. In this vein, we see female bloggers setting out their arguments more circumspectly by hedges than their male counterparts, who are more self-assured in putting forward their views by boosters, or are more comfortable with attitudinal meanings expressed by attitude markers than females. By contrast, we see a tendency in the male and female bloggers' use of self-mentions to provide the extent of their own authorial presence. Because such differences as well as similarities in gender-privileged features of language suggest shared evaluative concerns in both disciplines, male and female bloggers are thus able to blog about their niche topics, disseminate and promote science, and ultimately forge aspects of their disciplinary roles and identities through the merging of the academic and public space of scientific communication.

Over and above, these findings reveal that the patterns of text meanings, roles and identities are grounded in the discoursal choices of argumentative stance features available for social goals of the genre, and emphasize that gender impinges on disciplinary discourse while also accounting for how research issues can be discussed in agreed ways. Thus, viewed as an influential, but not major source of discourse variation in the texts examined, gender essentially allows male and female bloggers to shape their opportunities and expectations for the textual and discoursal practices of their medicine and biology disciplines, giving a plausible appearance to 'masculine' and 'feminine' evaluations of the topics in this kind of argumentative and persuasive writing. Of course, gender here cannot be taken only at face value in that, as mentioned, male and female bloggers come from and adopt the values of different cultures that might act upon their blog content and style alongside their scientific research culture recognized by the 'hard' disciplines. In line with this, gender and other variables may not only determine the ways of performing "gendered acts" (Eckert/McConnell-Ginet 2003: 4) in the interactional public space of the social medium, but may also account for the scientific roles, identities, writing style and content decisions of male and female bloggers in the immediate social and communicative situations, thus realizing opportunities and expectations for both genders in the texts. But it is possible to go beyond the ordinary limits of blog writing here and perceive the gender identity of male and female bloggers as being constructed by individual predispositions as much as by the persistence of social pressures that influence their behaviour in line with the predominant gender roles and stereotypes.

This is nothing new since gender is formed during the socialization process, albeit being a complex phenomenon in this kind of process, and as such shapes opportunities and expectations for both male and female bloggers writing in accordance with their preferred discourse practices as well as their social and epistemological questions of constructing science in the chosen fields. Despite the complexity of 'gendered' language, discursive and linguistic findings presented in this study may unravel some of the interesting relationships between discipline and gender that are still largely missing from the research landscape of 'hard' science disciplinary blogs. Thus, this study aims to contribute additional evidence to the body of published research.

References

Bednarek, Monika 2006. *Evaluation in Media Discourse. Analysis of a Newspaper Corpus*. London: Continuum.

Benwell, Bethan / Stokoe, Elizabeth 2006. *Discourse and Identity*. Edinburgh: Edinburgh University Press.

Biber, Douglas 2006. *University Language. A Corpus-Based Study of Spoken and Written Registers*. Amsterdam: John Benjamins.

Biber, Douglas / Johansson, Stig/ Leech, Geoffrey / Conrad, Susan / Finegan, Edward / Quirk, Randolph 1999. *Longman Grammar of Written and Spoken English*. Harlow: Longman.

Butler, Declan 2005. Joint efforts. *Nature*, 438, 548-549.

Bondi, Marina 2018. Try to prove me wrong: Dialogicity and Audience Involvement in Economics Blogs. *Discourse, Context & Media* 24, 33-42.

Bondi Marina / Diani, Giuliana 2015. 'I am wild about cabbage': evaluative 'semantic sequences' and cross-linguistic (dis)similarities. *Nordic Journal of English Studies*, 14/1, 116-151.

Brenner, Joanna. 2012. Social Networking. *Pew Internet and American Life Project*.

Butler, Judith 2007. *Genustrubbel Feminism Ochidentitetens Subversion*. Enskede: TPB.

Cameron, Deborah 2009. Theoretical issues for the study of gender and spoken interaction. In Pichler, Pia / Eppler, Eva M. (eds) *Gender and Spoken Interaction*. London: Palgrave Macmillan, 1-17.

Conrad, Susan / Biber, Douglas 2000. Adverbial Marking of Stance in Speech and Writing. In Hunston, Susan / Thompson, Geoff (eds) *Evaluation in Text: Authorial Stance and the Construction of Discourse*. Oxford: Oxford University Press, 56-73.

D'Angelo, Larissa 2008. Gender Identity and Authority in Academic Book Reviews: An Analysis of Meta Discourse across Disciplines. *Linguistica e Filologia* 27, 205-221.

Dousti, Masoumeh / Rasekh, Abbas Eslami 2016. ELT Students' Gender Differences in the Use of Hedges in Interpersonal Interactions: A Mixed Method Approach Applied. *Journal of Applied Linguistics and Language Research* 3/1, 217-231.

Eckert, Penelope / McConnell-Ginet Sally 2003. *Language and Gender*. Cambridge: Cambridge University Press.

Fahy, Patrick 2002. Use of Linguistic Qualifiers and Intensifiers in Computer Conference. *The American Journal of Distance Education*, 16/1, 5-22.

Fallows, Deborah. 2005. How Women and Men Use the Internet. *Pew Internet & American Life Project*.

Garzone, Giuliana / Poncini, Gina / Catenaccio, Paola (eds.) 2007. *Multimodality in Corporate Communication. Web Genres and Discursive Identity*. Milan: FrancoAngeli.

Garzone, Giuliana 2020. *Specialised Discourse and Popularization in English*. Rome: Carocci.

Herring, Susan / Johnson, Deborah / Di Benedetto, Tamra 1995. The Discussion is Going Too Far! Male Resistance to Female Participation on the Internet. In Mary Bucholtz / Kira Hall (eds.) *Gender Articulated: Language and the Socially Constructed Self*. New York: Routledge, 67-96.

Herring, Susan C. / Kouper, Inna / Paolillo, John C. / Scheidt, Lois A. / Tyworth, Michael / Welsch, Peter / Wright, Elijah / Yu, Ning 2005. Conversations in the Blogosphere: An Analysis 'from the Bottom Up'. In *Proceedings of the 38th Hawaii International Conference on System Sciences (HICSS'05)*. Los Alamitos: IEEE Press, 1-11.

Herring, Susan / Stein, Dieter / Virtanen, Tiuja (eds.) 2013. *Pragmatics of Computer-mediated Communication*. Berlin: DeGruyter.

Hunston, Susan / Thompson Geoff 2000. Evaluation: An Introduction. In Hunston, Susan / Thompson, Geoff (eds) *Evaluation in Text: Authorial Stance and the Construction of Discourse*. Oxford: Oxford University Press, 1-27.

Hyland, Ken 1998. Boosting, Hedging and the Negotiation of Academic Knowledge. *TEXT* 18/3, 349-382.

Hyland, Ken 2005a. Stance and Engagement: A Model of Interaction in Academic Discourse. *Discourse Studies*, 7/2, 173-192.

Hyland, Ken 2005b. *Metadiscourse*. London: Continuum.

Hyland, Ken 2009. Corpus Informed Discourse Analysis: The Case of Academic Engagement. In Charles, Maggie / Pecorari, Diane / Hunston, Susan (eds) *Academic Writing: At the Interface Between Corpus and Discourse*. London: Continuum, pp. 110-128.

Hyland, Ken 2010. Constructing Proximity: Relating to Readers in Popular and Professional Science. *Journal of English for Academic Purposes* 9, 116-127.

Hyland, Ken / Tse, Polly 2004. Metadiscourse in Academic Writing: A Reappraisal. *Applied Linguistics*, 25/2, 156-177.

Hyland, Ken / Tse, Polly 2005. Evaluative that Constructions: Signalling Stance in Research Abstracts. *Functions of Language*, 12/1, 39-63.

Lakoff, Robin 1975. Language and Woman's Place. *Language and Society*, 2, 45-79.

Lemke, Jay L. 1998. Resources for Attitudinal Meaning: Evaluative Orientations in Text Semantics. *Functions of Language* 5/1, 33-56.

Martin, James R. / White, Peter R.R. 2005. *The Language of Evaluation: Appraisal in English*. London: Palgrave Macmillan.

McElhinny, Bonnie S. 1995. Challenging Hegemonic Masculinities: Female and Male Police Officers Handling Domestic Violence. In Hall, Kira / Bucholtz, Mary (eds) *Gender Articulated: Language and the Socially Constructed Self*. London: Routledge, 217-243.

Mirzapour, Fatemeh 2016. Gender Differences in the Use of Hedges and First-person Pronouns in Research Articles of Applied Linguistics and Chemistry. *International Journal of Applied Linguistics & English Literature* 5/6, 166-173.

Mullany, Louise 2007. *Gendered Discourse in the Professional Workplace*. London: Palgrave Macmillan

Myers, Greg 2010. *The Discourse of Blogs and Wikies*. London: Continuum.

Pauwels, Luc 2006. *Visual Cultures of Science. Rethinking Representational Practices in Knowledge Building and Science Communication*. Lebanon, NH: Dartmouth College Press.

Pedersen, Sarah, & Macafee, Caroline 2007. Gender differences in British blogging. *Journal of Computer-Mediated Communication*, 12/4, 1472-1492.

Robson, Jocelyn / Francis, Becky / Read, Barbara 2002. Writers of Passage: Stylistic Features of Male and Female Undergraduate History Essays. *Journal of Further and Higher Education* 26/4, 351-362.

Schradie, Jen 2011. The Digital Production Gap: The Digital Divide and Web 2.0 Collide. *Poetics* 39/2, 145-168.

Seyyedrezaie, Sadat Z. / Vahedi, Sadat V. 2017. Projecting Gender Identity through Metadiscourse Marking: Investigating Writers' Stance Taking in Written Discourse. *Indonesian Journal of Applied Linguistics*, 6/2, 301-310.

Shema, Hadas / Bar-Ilan, Judit / Thelwall, Mike 2012. Research Blogs and the Discussion of Scholarly Information. *PLoS ONE*, 7/5, e35869.

Tessuto, Girolamo 2015. Posted by ...: Scholarly Legal Blogs as Part of Academic Discourse and Site for Stance and Engagement. In Scarpa, F. / Engberg, J. (eds) *Textus* 2, 85-107.

Tessuto, Girolamo 2020a. Academic Medicine and Health Research Blog Posts as Interaction and Knowledge-making Resources. In Gotti, Maurizio / Maci, Stefania M. / Sala, Michele (eds) *Scholarly Pathways: Knowledge Transfer and Knowledge Exchange in Academia*. Bern: Peter Lang, 233-254.

Tessuto, Girolamo 2020b. Appraisal Engagement Patterns in Brexit-opinion Bearing Blogs. In D'Angelo M. / Ozbot, M. (eds) *Scritti in onore di Paola Desideri*. Florence: Franco Cesati (forthcoming).

Tessuto, Girolamo 2022. Exploring Covid-19 Discourse in Research-Focused Commentary Blogs: *Appraisal* Resources for *Engagement* Meanings. Contributo in onore a Giuliana Garzone, IULM, Milano.

Tse, Polly / Hyland, Ken 2006. Gender and Discipline: Exploring Metadiscourse Variation in Academic Book Reviews. In Hyland, Ken / Bondi, Marina (eds) *Academic Discourse Across Disciplines*. Bern: Peter Lang, 177-202.

Yaeger-Dror, Malcah 1998. Factors Influencing the Contrast between Men's and Women's Speech. *Women and Language*, 21/1, 40-45.

Yeganeh, Mariam T. / Ghoreyshi, Seyedeh M. 2015. Exploring Gender Differences in the Use of Discourse Markers in Iranian Academic Research Articles. *Procedia: Social and Behavioral Science*, 192, 684-689.

Wodak, Ruth 1995. Power, Discourse and Styles of Female Leadership in School Committee Meetings. In Corson, David (eds) *Discourse and Power in Educational Organisations*. Cresskill, NJ: Hampton, 31-54.

Corpus

On Biology blogs and *On Medicine* blogs available from http://blogs.biomedcentral.com/about/

MICHELE SALA

First things first: Engaging readers through Google hyperlink titles

1. Introduction

This analysis investigates the function performed by hyperlink titles (HTs) in Google result pages as metadiscursive frames markers (Hyland 2005), functioning as pre-sequences with respect to the associated texts and, as such, as important cognitive stages for preparing and introducing topics – and, precisely, sensitive ones, like end-of-life practices (ELPs) – and the relevant discussion which is fully carried out in the associated hyperlinked texts (or 'anchor text', cf. Liu 2011: 203; 231). The main assumption at the basis of this study is that such pre-sequences may metadiscursively function as framing devices (Entman 1993, 2010, Digirolamo/Hintzman 1997, Liu et al. 2019). By positing *data* (i.e. the topic) and anticipating *claims* (i.e. how the topic is to be interpreted, cf. Toulmin 1958/2003) – i.e., by indicating the field and the direction through which it is to be navigated – they can be considered as argumentative resources (or maps, in the 'orienteering' metaphor used above) guiding readers in processing the associated anchor. The aim is to see how this potential function, inherent in HTs, is used to rhetorically stimulate meaning negotiation when assessing culturally relevant and possibly ideology-laden contents.

1.1 What are HTs?

When users launch Web searches by typing specific keywords (either single search words or multi-word expressions) in search boxes, the related results listed on the Search Engine Results Page (SERP) are active links pointing to either websites, webpages or texts stored in digital archives (e.g. written texts, audio or video files). The format of the 'anchor' – i.e. whether it is a site, a page or a text – depends on the function of the word being searched for, which may be semantic (i.e. referring to an object, such as an event, a concept, a person, etc., within a class of objects, for instance the term 'telegraph') or a labelling one (for instance, the word 'Telegraph' as the name of the popular British newspaper). The latter is represented by those expressions (especially in the case of single words) which in the course of time, besides their semantic function, have started being used as names of organizations and institution, of social platforms, of file or song titles, etc. While the labelling function of a term may lead to anchors which are likely to be digital scaffolding structures, that is articulated sites, archives or extended texts containing several other texts (as is the case of *The Telegraph* website), the semantic function of the search term (i.e. the noun 'telegraph') typically corresponds to written texts which are self-standing (content-wise), internally coherent, with a marked referential function (informative, explanatory, descriptive or argumentative) and a sharp thematic point (like dictionary or Wikipedia entries, newspaper articles, etc.). For the scope and purpose of this analysis, only the latter type of results will be considered.

The reason for this choice is that, on the Google SERP, results pointing to the semantic function either replicate (often verbatim) the title of the anchor texts or are represented by formulations that are syntactically similar to newspaper headlines or document titles – namely, presented in nominal blocks (i.e. 'The telegraph', 'Definition of telegraph', etc.), or, more frequently, embedded in declarative or interrogative formulations (i.e. 'The triumph of the telegraph', 'What is a telegraph?', etc.), or also in formulations combining two expressions separated by a colon ('Telegraph: Invention, history and facts') (cf. Virbel 2002, Eyrolle et al. 2008, Hartley 2005a, 2007). Due to this syntactic and structural correspondence, Google HTs can indeed be considered fully fledged titles and can be analysed according to the same criteria applicable to this genre.

1.2 HTs as titling resources

Due to their prominent metatextual position – notably, on top of the full text, as in titles/headlines, and on the SERP (as well as at the beginning of the hyperlinked anchor text) – titling resources perform a very important anticipatory function, both at the referential and interpersonal level (Virbel 2002; Sala 2013; Sala/Consonni 2019). At the referential level the main focus is on clarity: titles need to disclose the content of the anchor in a transparent and informative way (Day 1994) – thus being at the same time "front matter and summary matter" (Swales 2003: 294). At the interpersonal level, instead, the focus is on effectiveness: titles need to attract the reader's curiosity, thus being impactful as well as clear (Whissel 1999; Lewison/Hartley 2005; Hartley 2005b). This can be attained by displaying elements which may stimulate the readers' interest, anticipate their needs and possibly reflect their positioning with respect to the meaning that has been searched for. Finally, titles have to account for the limited physical space allotted to their wording. Hence, in order for them to be easily retrieved through Web searches, they need to be expressed as much as possible in the terms through which certain meanings are codified in a given culture – and, as a consequence, through which given contents are going to be searched for (Haggan 1994).

In this respect, titles also function as consensus-building resources, in that they contribute to circulating certain terms in association to certain meanings, because "it is easier to understand and certainly easier to accept [information] that is consonant […] with the ideological consensus in a given society or culture" (van Dijk 1988: 121-122). On this basis it is possible to maintain that HTs – similarly to document titles or newspaper headlines – have the function of pre-sequencing the ensuing texts, not only by providing "high-quality semantic clues" (Chakrabarti et al. 1998: 307; see also Liu 2011; Fitzsimmons et al. 2019), but also by framing and perspectivizing given meanings with respect to given worldviews (Entman 1993; Tannen 1993; Ensink/Sauer 2003), hence both anticipating expectations as to the content and cues as to the orientation of its discussion. In this sense titles carry out a strategic metadiscursive function as frame markers: by "provid[ing] framing information about elements of the discourse", they help “organize propositional information in ways that a projected target audience is likely to find coherent and convincing” (Hyland 2005: 50, 51).

1.3 HTs as argumentative stages

According to Toulmin (1958/2003), the argumentative process consists of several stages, namely the position of *data* and *claim* (respectively the content and the point to be argued), of *warrant*, *backing* and *qualifiers* (elements corroborating in either abstract or factual terms the validity of the claim), and *rebuttal* (an element which, by circumscribing and contextualizing the validity of the claim, contributes to reinforcing its tenability). With respect to this model, precisely in their metadiscursive function of frame markers, HTs can indeed be considered as argumentative pre-sequences, in that these are sites where *data* are posited and *claims* are anticipated (although in a very synthetic and elliptic way), thus determining and disclosing the type and slant of the ensuing discussion (Johnstone 2009).

This argumentative potential is inherent to the interpersonal dimension which is typical of titles, and favours engagement and cognitive stimulation. More specifically, cognitive engagement stems from the fact that argumentative elements like *data* – and (possibly) some elements of the *claim* –[1] are directly posited by readers themselves when they chose for their Google queries specific search terms in connection with specific topics. As a consequence, readers are likely to read the full anchor text when they find a match between their expectations, and the anticipated informative offer found in HTs, or when the reader’s ideological positioning is aligned with what is implied (or explicitly stated) in the HT.

1 For instance, if I search Google for the keyword ‘police brutality’, chances are that I do not only want to find information about it as ‘social’ phenomenon – or as *data* (something that happens) – but most likely as a problem, i.e. subject to some form of evaluation – or as *claim* (something negative, that shouldn’t happen). In this sense, by choosing search terms, I am actively taking part in the argumentative process and in the negotiation of meaning with the text I am about to read.

In consideration of the interplay of all these factors, this analysis sets out to address the following research questions:

- How do HTs represent sensitive topics for them to be cognitively effective?
- Though what mechanisms do HTs establish argumentative pre-sequences for the understanding of the anchor text, and how is the readership engaged in the process of meaning negotiation?

This paper reports a corpus-driven study (Tognini Bonelli 2001) carried out on a small selection of HTs (119 items under scrutiny) found in Google SERP resulting from queries concerning ELPs – i.e. End of Life Practices, those practices meant to hasten a patient's life, typically due to incurable diseases, usually represented through terms such as *euthanasia*, *assisted suicide, aid in dying,* etc. These concepts are particuraly sensitive because they refer to practices meant to procure death, even though in a way that is medically assisted or meant to relieve from suffering; and in Western culture, together with related notions such as suicide and killing, death is indeed a taboo notion, one that might hurt people's sensitivity or evoke aversive reactions (Crespo-Fernández 2018)

For this study, only the first SERP for each search term has been considered (each SERP containing an average of nine results), on the assumption that users' attention will be focused on the first entries displayed, and only in case they are not satisfied with the first results will they then move on to the following SERPs.

This research is also aimed to evidence how lay audiences (those resorting to Google – rather than to specialized sources – to find information they may need) are engaged, and how sensitive subjects are dealt with in order to be accessible and appealing to such readership.

The focus on lay users – i.e. readers with little or no specialized competence in ELPs, but only interest in them, and, because of that, possibly influenced by prejudice, bias, and expectations – is meant to shed light on how they are led to find and select results that they perceive as being relevant and reliable.

The focus on sensitive topics, instead, is due to the fact that, since they imply some form of judgement or positioning, they will not only elicit general curiosity, but, most likely, strong interest and even some form of urge to find answers to specific questions. For instance, users may be willing to find out whether or why they are right in holding specific standpoints, and to find justification for their positioning in ways which are convincing and compelling. A tentative answer to such questions may be already implied by or alluded to in HTs themselves.

To address such research questions, this study will investigate, firstly, the terms which are used for ELP-related searches and their distribution across our corpus: this will reveal the hierarchy of preferences through which sensitive and value-laden concepts are represented/searched for/found. Secondly, I will consider the structure and articulation of ELP HTs, that will be indicative of the type of negotiation which is implied with prospect readers (i.e. active, passive, presupposing a threshold level of competence, etc.).

2. Material and method

In order to assess the heuristic potential of specific words when used as search terms and, therefore, their possible function as argumentative frames, it is necessary to single out the most common and conventional forms employed by Google users to represent ELPs. To avoid the risk of anecdotal and impressionistic evidence, and to be sure to identify words which realistically correspond to those available to lay users for their Google searches, I went through a three-stage process: a general one, meant to collect possible lexical options, and two other stages meant to refine and organize such findings in terms of usability and productivity.

The first stage consisted in wide-ranging Web searchers for the terms, synonyms, or euphemisms, employed in digital media, popularizing sources, Wiki-pages, and also specialized sources to refer to ELPs. For these queries very general and neutral expressions – such as ‘end of life decision’, ‘end of life practices’, ‘end of life issues’ – were used, thus expressly avoiding terms such as ‘euthanasia’, ‘aid in dying', etc. since this would necessarily have biased the results and undermined the purpose of these queries. All the texts resulting from these broad searches were then skimmed and scanned in order to locate all terms used to point to ELPs. To account for the full range of lexical possibilities, for each found term, I have also considered the 'suggestions' provided by Google tools like Autosuggest (which operates, when typing a text in the Google search box, by anticipating the possible full words users are typing in) or Related Search options (which appear at the bottom of the SERP) – both based on Google traffic dynamics, the former being a word-based tool (i.e. indicating that some X word is often associated to some Y word in users' searches) the latter a topic-based tool (i.e. indicating that some X query/content is often associated to some Y query/content in users' searches).

At this stage, the terms more frequently found in SERPs and related Web sources and among Google suggestions were by far *euthanasia* (Eu), *assisted suicide* (AS), *assisted death* (AD), *assisted dying* (ADY) – in some cases pre-headed by the modifiers *medically* (respectively MAS and MAD) or *physician* (PAS and PAD) – and *aid in dying* (AID), as well as *mercy death* (MD) and *mercy killing* (MK)[2]. For the purpose of this analysis, I have only considered the expressions above, in that found in (approximately) 50% of the texts dealing with ELPs considered in this stage of the investigation.

For the sake of clarity, it should be pointed out that those terms are not (always) full synonyms. As a matter of fact, *euthanasia* (neoclassical compound, produced as a neologism in the early 17th century and literally translating as 'good death') is a mono-referential term used both in specialized and popularizing settings to refer to the

---

2 Other phrases were also found but not as frequently and consistently, either because uncommon, idiosyncratic or used in very specific domains – and unlikely by lay users – such as *medicalized murder, medicalized* (or *medical*) *killing, assisted killing* (found for instance in studies of euphemisms for murder used in the Nazi euthanasia program, cf. Mitchell 1999), *expedited death* (cf. Drinan 1995), *merciful death, death with dignity* (cf. Oregon Death with Dignity Act, cf. https://deathwithdignity.org/states/oregon/), *painless end of suffering, termination of life, managed death* (cf. Sulmasy 1995), *assisted self-murder, assisted self-killing*, or even the '*Liverpool pathway'*.

act of (painlessly, deliberately) causing the death of someone who is suffering. Eu could be distinguished into five sub-categories, namely:

- active: deliberately performed by a professional or a lay person to hasten a patient's demise;
- passive: due to deliberately withholding treatment that could keep a patient alive;
- voluntary: performed with the patient's consent;
- non-voluntary: without the patient's consent but as a decision taken by a legal surrogate on the patient's behalf;
- involuntary: without the patient's consent.

All other terms are crystallized and possibly semantically polysemous expressions, and as such, as we will see below, they can project or reflect specific connotations due to their component parts.

AS and MD refer to the action of terminating the patient's life on his/her express requests (i.e. corresponding to voluntary, and active, Eu). PAD, PADY, AD, as well as MAD ad MADY are the terms used when a mentally competent patient resorts to a professional's assistance or prescription to hasten his/her death. The same applies to AID. MK is often used to refer to involuntary euthanasia, carried out without the patient's permission.

The second stage was devoted to checking the usability of the set of terms outlined above with the aid of informants, that is native speakers of English (in our case all from the UK and, more specifically, nine language teachers at the University of Bergamo, not experts in any specialized domain – except the English language – hence possibly representative of the ideal lay user). First, I enquired about the terms they would use in order to search for ELPs, in order to check if the list above needed to be completed or expanded. Once ascertained that this was not the case, I showed the list of the results and ask them to order the terms on the basis of their effectiveness and usability (by this we mean, which were the terms that they would more likely use for ELP-related searches). All of them considered Eu to be the best option, together with AID: being the most neutral – or least biased – terms, they are likely to produce more informative than evaluative results. The next option seemed to be represented by clusters pre-headed by the term *assisted* – considering the head *dying* (ADY) to be preferable to *death* (AD), that, in turn, is preferable to *suicide* (AS) – which are considered to be more acceptable in their pre-modified construction (preceded by *physician* and *medically*, in that both modifiers confer a (pseudo-) scientific nuance of meaning to the expressions). They concurred that formulations containing the terms 'suicide' (especially AS) and 'killing' (MK) were face-threatening, negatively connoted and stigmatizing in that referring to acts (the act of taking one's own or someone else's life) which are considered taboo.[3] Quite interestingly, all informants seemed to agree that using such stigma-loaded items as search term (thus getting to anchor texts conceiving of ELPs in such a light) may be symptomatic of the user's standpoint and ideological orientation as to the subject – which may be either critical or very aware of the problematicity of such practices.

Below is the listing of the ELP terms ordered in terms of their usability (as defined above):

- *euthanasia* (Eu);
- *aid in dying* (AID);
- *physician assisted dying* (PADY), *medically assisted dying* (MADY);
- *physician assisted death* (PAD), *medically assisted death* (MAD);
- *physician assisted suicide* (PAS), *medically assisted suicide* (MAS);
- *assisted dying* (ADY);
- *assisted death* (AD);
- *mercy death* (MD);
- *assisted suicide* (AS);
- *mercy killing* (MK).

The third stage of the investigation was meant to compare the informants' list with the listing resulting on the basis of the 'Number of results' (NR) option in Google (displayed through the formulation 'About XXXX results (X seconds)' which appears below the search box

---

3 Only two of the informants were aware that AS is a conventional term used in both the legal and medical domain to refer to (some) ELPs, because they served as reviewers of research articles in medicine and law, hence recognized AS as a domain-specific rather than biased term.

after digiting a given search term. This is an approximation of the amount of results for specific search terms, calculated periodically[4] (hence changing very frequently) on the basis of Google traffic and indicating the number of sources to be realistically found on the Internet in relation to the search term. In other words, this is a statistic estimation of the productivity and ‘popularity’ of given search terms[5]. The purpose was to fine tune the criteria of our analysis and see whether the ordering provided by the informants matched that of Google users. I therefore typed in the Google search box each of the terms listed above, and considered for each the NR indicated in the SERP.

The ranking of the most productive ELP terms according to Google NR figures is as follows:

AS:	About 138.000.000 results (0,49 seconds)
AID:	About 117.000.000 results (0,43 seconds)
MK:	About 56.200.000 results (0,63 seconds)
PAD:	About 53.100.000 results (0,49 seconds)
MD:	About 38.000.000 results (0,42 seconds)
PAS:	About 34.200.000 results (0,56 seconds)
ADY:	About 34.200.000 results (0,56 seconds)
Eu:	About 15.500.000 results (0,39 seconds)
MAD:	About 7.650.000 results (0,80 seconds)
AD:	About 6.950.000 results (0,57 seconds)
PADY:	About 6.290.000 results (0,55 seconds)
MAS:	About 5.290.000 results (0,43 seconds)
MADY:	About 914.000 results (0,43 seconds)

[4] This automatic calculation is carried out through specific metrics parameters as described at <https://support.google.com/analytics/answer/1032321?hl=en>; <https://www.quora.com/How-is-the-total-number-of-results-on-Google-search-calculated>.

[5] For this part of the analysis, in order to avoid previous searches influencing the next ones, and in order to avoid possible traffic tracking which would possibly affect metrics calculations, I have used five different machines (always making sure not to log in to any Google account, using private browsing, and deleting cached data before and after each search), then comparing the results that I got from each. These Web searches were carried out on September 29th and 30th, 2021.

At this point, the informants' list and the one produced by Google NPs have been compared to verify whether they were aligned or significantly divergent. The results are organized in Table 1 below.

INFORMANT LIST	***Google NR list***
Eu	AS
AID	AID
PADY/MADY	MK
PAD/MAD	PAD
PAS/MAS	MD
ADY	PAS
AD	ADY
MD	Eu
AS	MAD
MK	AD
	PADY
	MAS
	MADY

Table 1. Comparison of ELP terms in the informants' list and in Google NRs.

Besides some common positions (in green in the Table, i.e. AID, PAD, PAS, and ADY), the ordering of the two lists is reversed (in red in the Table): Eu– the least marked and most neutral term in terms of connotation (being at the same time technical without being gate-keeping, and sufficiently inclusive for ELPs without being too general) – drops from the first position in the informants' list to the eighth in Google NRs, while MK and AS – which were considered by informants to express negative evaluation – climb up to the top positions in the latter list, with a frequency for AS which is ten times higher than Eu.[6]

[6] The different positions of multiword expressions – MADY, MAD, MAS, etc. – is difficult to be accounted for here since our informants considered them to be full synonyms to other expressions – MAS=PAS, PAD=MAD, etc. – whereas in Google NP they are treated as totally different expressions. The only possible consideration is that, whether our informants considered then to be fully synonymic in terms of usability, they are not the same in terms of productivity.

Far from being problematic, this difference indicates that, while representing lay users, our informants were indeed biased in providing their ordering, in that they considered effectiveness and usability in terms of cultural accessibility and political correctness (for instance, by discarding formulations containing the terms ‘suicide’ or ‘killing’), which is not necessarily a concern for all Google users. Indeed, we may find that those terms which were considered by informants to be too negatively connoted or openly biased, appear in Google with the highest NR, i.e. as most productive and, as such, likely to correspond to the highest number of results. (The impression, after this last stage of assessment, is that those terms preferred in one list and dispreferred in the other – in red in the table – are particularly worth focussing upon.)
At this point, all the 13 forms in the two lists above, irrespective of their ranking, were finally used as search terms. The resulting HTs, displayed on the first SERP per each, count a total of 119 HTs.

3. Results and discussion

After having identified ELP terms which appear to be usable by lay Google users and productive for Web queries, we now investigate the heuristic function of such terms when they are used in HTs to establish argumentative and interpretive frameworks. This part of the analysis will be carried out from two different perspectives: firstly, by considering the type of correspondence between search terms and results (i.e. whether the HTs contain the search term or semantically similar expressions); secondly, by considering the type and syntactic structure of HTs containing ELP terms – on the basis of the fact that given structures presuppose a specific type of discussion in the anchor text.

3.1. Search term and result correspondence

One interesting piece of evidence that could easily be observed while collecting results is that there isn't always a word-to-word correspondence between search terms and results. Below an example of the SERP listing results for the search term 'assisted dying'.

(1) i) Euthanasia and assisted suicide: What are they […]
ii) Euthanasia and assisted suicide – NHS
iii) Assisted suicide – Wikipedia
iv) States That Allow Assisted Death - Death with Dignity Acts
v) Assisted dying
vi) Euthanasia, assisted suicide and non-resuscitation on request
vii) Assisted Dying and Legal Change - Oxford Scholarship
viii) Euthanasia and assisted dying rates are soaring

As we see, there are some verbatim correspondences, where the search term produces a result containing it, as is the case of (v), (vii), (viii), but there also instances of non-verbatim correspondence – which even occupy higher ranking positions on the SERP – where results contain a mere approximation of the search term, parts of it, or even other expressions thematically associated to it (i.e. synonyms, quasi-synonyms or terms pertaining to the same semantic field). Table 2 below evidences the frequency and distribution of verbatim (in white) and non-verbatim correspondences (in blue). Asterisks in the columns stand for each HT found in the SERP for every term searched for (indicated by the label on top of each column). As we see, there is a predominance of blue/non-verbatim results in our corpus (66 out of 119 *vs*. 53 for verbatim ones). The fact that a single search expression may produce a majority of results not containing the search term itself seems to imply the existence of a set of interrelated references which factively contribute to shaping certain concepts with respect to certain terms, which then become available and readily usable to Web users. To put is simply, the non-verbatim forms seen in (1) concerning ADY shape the idea of 'assisted dying' as something related to 'euthanasia' and 'assisted suicide', and not to 'physician'/'medically assisted dying', on the one hand, nor to 'mercy death' and 'mercy killing', on the other.

Eu	*AID*	*ADY*	*AD*	*AS*	*MADY*	*MADE*	*MAS*	*PADY*	*PADE*	*PAS*	*MK*	*MD*
*	*	*	*	*	*	*	*	*	*	*	*	*
*	*	*	*	*	*	*	*	*	*	*	*	*
*	*	*	*	*	*	*	*	*	*	*	*	*
*	*	*	*	*	*	*	*	*	*	*	*	*
*	*	*	*	*	*	*	*	*	*	*	*	*
*	*	*	*	*	*	*	*	*	*	*	*	*
*	*	*	*	*	*	*	*	*	*	*	*	*
*	*	*	*	*	*	*	*	*	*	*	*	*
	*	*			*	*	*	*	*	*	*	
	*					*	*	*	*		*	

Table 2. Frequency and distribution of verbatim (in white) and non-verbatim correspondences.

In order to find out whether there is an explanation to such verbatim (mis)matching, a closer look at the distribution of the various results becomes necessary. By observing the results, from a quantitative point of view, we can see that, in general, short clusters (1-2 words) are more likely to yield verbatim correspondences. We can then notice that the most frequent verbatim correspondences concern the terms Eu (100% of the cases), followed by AID and MK (both 90%), and AS (around 80%); in the remaining searches – with the exception of ADY (around 60%) – verbatim returns are around 40% or less frequent. These results seem to indicate that there is a restricted and very easily identifiable set of common expressions used by the literature (i.e. media, digital popular press, personal or corporate webpages, forums and blogs) to refer to ELPs.

From a qualitative perspective, instead, we find that three of the four expressions highlighted in Table 1 – that is, those revealing some form of ideological positioning, either in terms of political correctness (which is indeed an ideological stance, precisely meant to express 'lack of negative stance', as in the case of Eu) or negative attitude (such as MK and AS) – are the ones returning verbatim results. Therefore, these terms – irrespective of (or possibly due to) their implicit bias – appear to be particularly common and productive ways of codifying ELPs. This may imply that users' searches tend to be evaluation-based or ideology-driven, rather than merely information-oriented.

Another interesting piece of evidence is represented by the large amount of non-verbatim correspondences. This seems to indicate that there is an epistemic pool of interrelated notions and cross-references so tightly connected that, whatever the search term, we are likely to end up on the same (sets of) results (synonyms or approximations). This, in turn, appears to corroborate the idea that certain sensitive referents are effectively represented and understood by means of specific terms and standardized forms which (in the course of time) have become culturally accessible, easily recognizable and, as such, taken to be particularly transparent to point to given meanings.

3.2 HT type

The next part of our analysis investigates the informative structure and syntactic organization of HTs, since their articulation may be indicative of the way a specific content will be (cognitively) dealt with in the anchor text (Hartley 2005b, Sala/Consonni 2019). By observing the HTs in our corpus a major distinction can be found between those pointing to elements which are *central* with respect to the phenomenon searched for (i.e. implying that the anchor will help understand some core aspects on the basis of some specific principles or criteria), and others which are *peripheral* ones (i.e. concerning situational and contextual instantiations of a given phenomenon within specific time-space settings and constraints). Titles pointing to *central* features are those codifying definition (implicitly or markedly) or meaning relations (more specifically, combinations in terms of association or dissociation, see 3.2.1 below). Those pointing to peripheral aspects are instances of *contextualization* ('States That Allow Assisted Death - Death with Dignity Acts'), *news-event-related* ('Wife cleared of husband's 'mercy killing' murder'), or *affect-based* ('Exploring the experience of supporting a loved one [through medically assisted death]'). The distribution of both types can be seen in the table below (purple for *central* strategies and white for *peripheral* ones). For the purpose of this analysis (also due their scarcity in the corpus) *peripheral* HTs will not be considered.

Eu	*AID*	*ADY*	*AD*	*AS*	*MADY*	*MADE*	*MAS*	*PADY*	*PADE*	*PAS*	*MK*	*MD*
*	*	*	*	*	*	*	*	*	*	*	*	*
*	*	*	*	*	*	*	*	*	*	*	*	*
*	*	*	*	*	*	*	*	*	*	*	*	*
*	*	*	*	*	*	*	*	*	*	*	*	*
*	*	*	*	*	*	*	*	*	*	*	*	*
*	*	*	*	*	*	*	*	*	*	*	*	*
*	*	*	*	*	*	*	*	*	*	*	*	*
*	*	*	*	*	*	*	*	*	*	*	*	*
	*	*			*		*	*	*	*	*	
	*					*	*	*	*		*	

Table 3. Distribution of central and peripheral HTs.

3.2.1 Types of central titles

Definition HTs are those pointing to anchors where to find definition, description, or explanation of the phenomenon searched for. Such a function can be implicitly expressed or metalinguistically marked.
Implicit or indicative formulations simply replicate the term searched for, or the expression conventionally associated to a given ELP, in nominal and verbless blocks (mostly the case of Wikipedia entries), for example:

(2) *Euthanasia – Wikipedia*
(3) *Assisted suicide – Wikipedia*
(4) Assisted dying

Metatextually marked forms are those which integrate the search term into a syntactically self-standing sentence which explicitates the pragmatic function of the anchor (i.e. ‘X - Fast facts’, ‘FAQ about X’, ‘Definition of X’, ‘Meaning of X’, etc.):

(5) *What is a mercy killing?*

(6) *Ten Facts About Medical Aid in Dying*

(7) *Physician-Assisted Death: What Everyone Needs to Know*

As we see, definition HTs point to anchors which are anticipated as being primarily descriptive, expository and informative, and therefore, on the whole, with little argumentative potential (allowing no space for objections, disagreement of meaning negotiation). As such, they are little cognitively engaging (even when this aspect is metalinguistically emphasized – for instance, by the use of interrogative forms).

Combination HTs are represented by formulations relating two different concepts (one usually being the search terms, the other being a closely or remotely associated idea, possibly within the 'epistemic pool' of cross-references mentioned above). Combinatory strategies can be distinguished into *association* and *dissociation* markers.

Association titles are those forms positing "the unification of separate elements into a simple whole (bringing elements together)" (Komlósi 2006: 180), that is, correlating, combining and bringing together terms/concepts as if they were related, or part of a larger whole, as the following examples show:

(8) *Euthanasia, assisted suicide and non-resuscitation on request*

(9) *Suicide, physician-assisted suicide and mercy killing […]*

(10) *Euthanasia and assisted suicide: What are they […]?*

Even though we may expect the anchor to contain elements by which to clearly differentiate between the concepts which are associated in the HT, it is nonetheless relevant that in HTs such concepts are presented as similar, contiguous or overlapping.

Dissociation titles are instead those structures distinguishing, separating or even contrasting concepts which may commonly be mistaken as being contiguous or part of the same whole, in that "dissociation disintegrates and separates elements that formed a unit before [or applies when] a concept is differentiated from a concept that it was part of" (Komlósi 2006: 180). This dissociative function can be carried out, either:

a) from a *protagonist's* perspective (the *protagonist* being the arguer supporting a claim, the one who "defends a standpoint", van Eemeren/Grootendorst 2009: 120), that is when the HT points to an anchor which, in positive terms, explains or discusses the difference between the two meanings, as in the following cases:

(11) *How does mercy death differ from mercy killing?*

(12) *What's the difference between assisted suicide and euthanasia?*

(13) *ASSISTED SUICIDE - Four Differences between Mercy-Killing and Merciful Death*

b) from an *antagonist's* perspective (where "the antagonist calls [the standpoint's] acceptability into question", van Eemeren/ Grootendorst 2009: 120), when the HT, in negative terms, counterclaims, falsifies or deconstructs a combination of concepts which may be taken from granted. This can be carried out through negation and questions (conducive *yes-no* polar questions, which cast doubt onto the propositional meaning and presuppose answers of the opposite polarity):

(14) *Medical Aid in Dying is NOT Assisted Suicide*

(15) *Is "aid in dying" suicide? – NCBI*

(16) *Physician Assisted Suicide: Medical Practice or Killing in [Practice?]*

Unlike definition HTs, combinatory formulations are more engaging: by pointing to the relationship between two concepts, they presuppose a threshold (or even an advanced) level of competence on the part of the reader, and his/her active role in the process of meaning negotiation. Moreover, combinatory HTs have a marked argumentative potential: they presuppose the interpretation of a concept with respect to another one – this being especially true for dissociative antagonistic forms, which imply a relatively high degree of knowledge of the concepts juxtaposed, negated or questioned for them to be understood.

Table 4 below shows the occurrence and distribution of central HT types in our corpus. Each square in the columns stands for a HT found on SERPs by using as search term the one displayed in the first line: *definition* HTs are indicated in pink, *association* HTs in green, *protagonist dissociation* in dark blue, and *antagonist dissociation* in light blue (blank squares marked with '-' refer to peripheral formulations).

Eu	*AID*	*ADY*	*AD*	*AS*	*MADY*	*MADE*	*MAS*	*PADY*	*PADE*	*PAS*	*MK*	*MD*
*	*	*	*	*	*	*	*	*	*	*	*	-
-	*	*	*	*	*	*	*	*	*	*	*	*
*	*	*	-	-	-	*	*	*	*	*	*	*
*	-	-	*	*	-	-	*	*	*	*	-	*
*	*	*	*	*	*	*	-	*	*	*	*	*
*	*	*	*	*	*	*	*	*	-	-	*	-
*	*	*	*	*	*	*	-	-	-	-	*	*
*	*	*	*	*	-	*	-	*	-	*	*	-
	*	*			-	-	*	*	*	*	*	
	-					*	-	-	*		*	

Table 4. Distribution of HT types in our corpus.

As we see, the most frequently found HTs are *definition* formulations (54 out of 119, approximately 45% of the total occurrences, for an average of 4 titles per SERP for every search term).[7] *Definition* HTs have a limited argumentative appeal, in that they simply posit the theme, the given information, without disclosing cues as to the type of informative articulation that is going to be found in the anchor. By observing the data, we notice that definition HTs are preferably used to introduce the quite critical concept of MK (which may possibly benefit

7 Even though not indicated in the Table, the exact half of these is represented by indicative forms – i.e. sounding detached, depersonalized, with an encyclopaedic character and pointing to the thematic nature of the associated entry – and the other half by metalinguistic framing structures – i.e. sounding more interactive, and ranging in terms of formality from a higher degree – '*meaning of x*' '*definition of X*' – to a lower degree – '*what is x*?'.

from a transparent exposition, likely to explain the apparently oxymoronic relationship between the terms ‘mercy’ and ‘killing’); or for multi-modified expressions/concepts (notably MAD, PADY, PADE, and also ADY and AID) whose lexical specificity may require informative detail.

Combinatory HTs, both associative and dissociative, have a frequency of 37 out of 119 and their distribution is quite homogeneous in the corpus (with an average of 3 combinatory forms per SERP). However, either type presupposes a different interpretive approach, thus performing a different pre-sequencing function. As a matter of fact, *associative* formulations (17/119) expect a lower level of background knowledge and a more open attitude on the part of the reader: these strategies are quite limited and appear to be most appropriate in the case of Eu HTs. On the other hand, *dissociative* formulations, which are slightly more numerous (20/119), codify a more structured stance, presuppose some background knowledge and a more solid competence on the part of the anticipated reader. Their overall distribution on the various SERPs in quite balanced (with the sole exception of MADE, which has no such entries). Of these, *protagonist* forms (8/119) – by which the prospect reader is expected to know the difference between the lexicalized concepts and is ideally prepared to be told the specific reasons why this is – are more frequently found in HTs concerning MD, which is one of the ‘value-laden’ search terms emerging from the contrast between the informants’ and NP lists (cf. Table 1). *Antagonistic* formulations (12/119), instead, presuppose a competent readership, familiar with the notions lexicalized in the HT, and account for the risk that users may confuse ELP concepts and are thus willing to find out on what basis they are different. These HTs seem to be mostly used with very specific and articulated (multi-word) ELPs (namely, MAS, PADY and PAS), possibly in order to highlight significant differences between them and other more general ELPs.

The final part of the analysis will focus on *combinatory* formulations, in order to see which ELP concepts are found in HTs in combination with search terms (both in the case of verbatim and non-verbatim results). This will help us understand what concepts or cross-references (among those available in the ‘epistemic pool’) ELPs are conceived of in the Web. Tables 5a and 5b below contain the classification of combinatory HT types: the symbol ‘+’ marking association (in the green squares), the symbol ‘v’ marking dissociation (*antagonistic* in light blue squares, *protagonistic* in dark blue squares; the acronym/label after such symbols represent the term(s) displayed in the HT (the symbol ‘*’ stands for combinatory elements which are different from the 13 considered here).

Eu	***AID***	***ADY***	***AD***	***AS***	***MADY***	***MADE***
+AS	+*	Eu+AS	Eu+AS	+Eu	+*	Eu+AS
+AS	v*	ASvEu	ASvEu	+Eu	AIDvAS	ASvEu
+AS	v*	AIDvAS	AIDvAS	vEu		
vAS				AIDvAS		

Table 5a. Forms of combination in combinatory HTs.

MAS	***PADY***	***PADE***	***PAS***	***MK***	***MD***
Eu+AS	Eu+AS	Eu+AS	Eu+AS	+PAS	PAS+MK
AIDvAS	AIDvAS	AIDvAS	AIDvAS	vMD	vMK
PAS+*	PAS+*		+*		vMK
					vMK

Table 5b. Forms of combination in combinatory HTs.

Combinatory formulations are 38/119. In general, we see that the terms which tend to occur in combination with the one searched for (or with related ones, in non-verbatim formulations) are AS (21 out of 38 cases), Eu (13), AID (8), and MK (4). The first noticeable piece of evidence is that AS is by far the idea which appears to be particularly effective in grabbing readers’ attention and stimulating their interest. This is especially interesting since, as we have noticed above, this cluster is quite controversial in that possibly critically connoted (due to its reference to ‘suicide’). The second and third-ranking combinatory terms, respectively Eu and AID, are less marked in that umbrella terms conventionally used to refer to ELPs. Therefore, when used as reference, they may work as conceptual facilitators. More marked –

although relatively infrequent – is instead the use of MK, in that, like AS, it is negatively connoted (containing the word ‘killing’).

Finally, it is worthwhile seeing how these combinatory elements – whose function is to connect the search term to existing ideas concerning ELPs – may perform an argumentative function, namely by either presupposing contiguity between search term and combined term (through *association*) or contrast (via *dissociation*). Association titles (16) seem to reflect, although on a minor scale, the same trend observed in combinatory HTs in general, where search terms are predominantly associated to AS (12) and Eu (9), while other associations are rare and little relevant. In terms of meaning negotiation, the reader is actively engaged by being offered the possibility of making sense of one meaning (the search term) in relation to another one (AS or Eu).

Dissociative HTs are slightly more frequent (22). Here argumentative engagement works in two different ways. With protagonistic formulations, the reader establishes the *data* – through the search terms – and the HT offers a combination of concepts which may function as a *claim* (of the type: ‘these two notions/terms may appear to be similar’). At this point the anchor will help the reader to take them apart, notably, by using either of them to better distinguish the other. Protagonist HTs use AS (4), Eu (4) and MK (2) as combinatory elements. Therefore, while accounting for a possible similarity between ELPs, they imply that specific ELPs are better understood against such notions as AS, Eu and MK. Antagonist formulation are instead meant to dissipate confusion and falsify contiguity, or even to discard wrong ideas that the readership might have concerning given phenomena. Here, the *data* posited by the reader through his/her query is met with a *claim* that deconstructs an association of concepts (i.e. ‘these two notions/terms are not similar’). In this case, the terms used to perform such dissociation are AS (8) and, quite surprisingly, AID (7). They represent two drastically different stances concerning ELP, i.e. critical for AS and positive for AID. Therefore, antagonist HTs claim that a given ELP is not only dissimilar from, but is not to be confused with AS and AID. The ELP phenomenon at stake is thus distanced from either possibly objectionable practices (AS) – hence justifying it – or from neutral ones (AID) – hence marking it as critical.

4. Concluding remarks

The findings collected through this analysis provide enough basis to assess the RQs posited at the beginning of this study.

The first line of investigation concerned the ways HTs engage readers in introducing sensitive topics like ELPs, i.e. those which activate different types of responses (to put it simply, either in favour or against them). After having identified a list of ELP-related expressions through very broad Web searches, then refined on the basis of reliable informants' feedback, and in consideration of the results obtained by using each of such expressions as search terms, we have noticed that a way of stimulating readers' participation is not just through results matching as closely as possible the potential search terms (i.e. through verbatim returns), but through formulations containing ELP-related terms which are probably more shared and transparent for lay readers (i.e. non-verbatim returns). We have observed that there are some terms – notably Eu, AID, MK and AS – that are particularly productive in that, on the one hand, they yield the majority of verbatim results (e.g. I search for Eu and I get Eu in the HT) and, on the other, they tend to appear frequently also in those HTs yielded by other search terms (e.g. I search for MADY and l get Eu in the HT).

Even though non-verbatim returns (66 out of 119) are more frequent than verbatim ones (53), which may appear to jeopardize engagement, we have also seen that the terms which are more productive are clearly polarized – more precisely Eu and AID, which, while being lexically neutral, are more positively connoted (Eu etymologically meaning 'good death', and AID containing the idea of 'aid'), while MK and AS contain negative connotation (pointing to cultural taboos, such as murder and suicide). Therefore, the displaying of such terms in non-verbatim HTs is indeed a way of capturing the reader's interest by presupposing a given positioning towards the ELP searched for, and a way of stimulating response by readers aligning with such stance.

The second line of investigation focused instead on the type of argumentative pattern and the function of metadiscursive pre-sequence played by HTs with respect to the anchor text, which imply a specific type of response (active or passive) on the part of the reader. For this we have examined the rhetorical structure of the HTs. In this respect we have seen that the majority of HTs (54/119) are formulated as definition-type – introducing an anchor which is expected to define and explain ELPs. Through such formulations the reader is addressed from a 'pedagogical' angle, that is from an expert-controlled perspective, where expert notions are explained to non-experts. This presupposes their little competence on the matter as well as their passive role in meaning negotiation. In a more restricted number of cases (37/119) HTs are organized by combining two ELP-related notions. Such formulations frame the anchor texts in argumentative terms (by advancing *claims* like 'the two notions are similar', 'the two notions may seem similar', 'the two notions are not similar'). Such HTs are more interactive and engaging, in that they presuppose a competent reader who is familiar with the idea that certain concepts are related and, as such, is more rhetorically engaged in the negotiation of meaning. In fact, unlike definition HTs which simply anticipate cognitive gaps to be filled, combinatory formulations presuppose claims to be verified. More specifically, association HTs do so by advancing claims to be accepted/align to ('A + B'), dissociative protagonistic HTs by offering claims to be checked or substantiated ('A ≠ B'), and dissociative antagonistic HTs by pointing to positions to be revised ('A vs. B') – the latter requiring a more advanced level of competence on the part of the reader, hence possibly sounding more challenging and interactive.

Google is indeed a source of information on a variety of topics available to and used by lay audiences. But, in order to get to this information, users have to first skim the entries which are listed on the SERP and eventually select the ones they perceive to be relevant. This is the metadiscursive function of HTs: not only to provide digital/physical links to access anchor texts, but also to texually frame and thematically pre-sequence the anchor and make its content appealing. This is particularly challenging when dealing with sensitive subjects like ELPs – containing reference to taboo ideas like death suicide, and even murder. This study has attempted to see how, in such cases, HTs can be exploited to make contents sound relevant, to engage audiences and project users' role as interested, ideologically positioned (in favour or against) and above all competent interactants in the process of meaning negotiation.

References

Chakrabarti, Soumen / Dom, Byron / Indyk, Piotr 1998. Enhanced Hypertext Categorization Using Hyperlinks. *ACM SIGMOD Record* 27/2, 307-318.

Crespo-Fernández, Eliecer (ed.) 2018. *Taboo in Discourse. Studies in Attenuation and Offence in Communication*. Bern: Peter Lang.

Day, Robert 1994. *How to Write and Publish a Scientific Paper*. Cambridge: Cambridge University Press.

Digirolamo, Gregory / Hintzman, Douglas 1997. First Impressions Are Last Impressions : A Primacy Effect in Memory for Repetitions. *Psychonomic Bulletin and Review* 4/1, 121-124.

Drinan, Robert 1995. Commentary: Suicide the Wrong Term for Gravely Ill Who Want to Die. *Religion News Service*, January 25.

Ensink, Titus / Sauer, Christoph (eds.) 2003. *Framing and Perspectivising in Discourse*. Amsterdam: John Benjamins.

Entman, Robert 1993. Framing: Toward Clarification of a Fractured Paradigm. *Journal of Communication* 43/4, 51-58.

Entman, Robert 2010. Media Framing Biases and Political Power: Explaining Slant in News of Campaign 2008. *Journalism* 11/4, 389-408.

Eyrolle, Hélène / Virbel, Jacques / Lemarié, Julie 2008. Effects of Incomplete Correspondence between Document Titles and Texts on Users' Representations: A Cognitive and Linguistic Analysis Based on 25 Technical Documents. *Applied Ergonomics* 39, 241-246.

Fitzsimmons, Gemma / Weal, Mark / Drieghe, Denis 2019. The Impact of Hyperlinks on Reading Text. *Plos One*. Retrieved from <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0210900>

Haggan, Madeline 2004. Research Paper Titles in Literature, Linguistics and Science: Dimensions of Attraction. *Journal of Pragmatics* 36, 293-317.

Hartley, James 2005a. Improving That Title: The Effects of Colons. *European Science Editing* 31, 45-47.

Hartley, James 2005b. To Attract or to Inform: What Are Titles for? *Journal of Technical Writing and Communication* 35/2, 203-213.

Hartley, James 2007. Planning that Title: Practices and Preferences for Titles with Colons in Academic Disciplines. *Library and Information Science Research* 29, 553-568.

Hyland, Ken. 2005. *Metadiscourse. Exploring Interaction in Writing.* London: Continuum.

Johnstone, Barbara 2009. Stance, Style and the Linguistic Individual. In Jaffe, Alexandra (ed) *Stance*, Oxford: Oxford University Press, 29-52.

Komlósi, László 2006. Hidden Effects of Presumptive Arguments on Argument Assessment Strategies. In Houtlosser, Peter / van Rees, Agnès (eds) *Considering Pragma-dialectics*. London: Lawrence Erlbaum, 175-184.

Lewison, Grant / Hartley, James 2005. What's in a Title: Number of Words and the Presence of Colons. *Scientometrics* 63/2, 341−356.

Liu, Bing 2011. *Web Data Mining. Exploring Hyperlinks, Contents, and Usage Data*. Berlin: Springer.

Liu, Siyi / Guo, Lei / Mays, Kate / Betke, Margrit / Wijaya, Derry 2019. Detecting Frames in News Headlines and Its Application to Analyzing News Framing Trends Surrounding U.S Gun Violence. *Proceedings of the 23rd Conference on Computational Natural Language Learning. Association of Computational Linguistics*, 504-514E.

Mitchell, Ben 1999. Of Euphemisms and Euthanasia: The Language Games of the Nazi Doctors and Some Implications for the Modern Euthanasia Movement. *Omega* 4/1, 255-265.

Sala, Michele 2013. Language Change in Legal Research Article Titles. In Poppi, Franca / Cheng, Zinnie (eds) *The Three Waves of Globalization: Winds of Change in Professional, Institutional and Academic Genres*. Newcastle upon Tyne: Cambridge Scholars, 222-243.

Sala, Michele / Consonni, Stefania 2019. Titles in Medicine and Science Popularization. In Bondi, Marina / Cacchiani, Silvia / Cavalieri, Silvia (eds) *Communicating Specialized Knowledge: Old Genres and New Media*. Newcastle upon Tyne: Cambridge Scholars, 16-32.

Sulmasy, Daniel 1995. Managed Care and Managed Death. *Archives of Internal Medicine* 155, 133-136.

Swales, John 2003. *Genre Analysis. English in Academic and Research Settings*. Shanghai: Shanghai Foreign Language Education Press.

Tannen, Deborah (ed.) 1993. *Framing in Discourse*. Oxford: Oxford University Press.

Tognini-Bonelli, Elena 2001. *Corpus Linguistics at Work*. Amsterdam: John Benjamins.

Toulmin, Stephen 1958/2003. *The Uses of Argument*. Cambridge: Cambridge University Press.

van Dijk T. 1988. *News as Discourse*. Hillsdale, NJ: Lawrence Erlbaum.

van Eemeren, Frans / Grootendorst, Rob 2009. *A Systematic Theory of Argumentation. The Pragma-dialectic Approach*. Cambridge: Cambridge University Press.

Virbel, Jacques 2002. Éléments de description du titre. Inscription spatiale du langage: structure et processus. *Actes ISLsp*, 123-134.

White, Arden / Hernandez, Nelda 1991. Increasing Field Complexity Revealed through Article Title Analyses. *Journal of the American Society for Information Science* 42, 731-734.

Whissell, Cynthia 1999. Linguistic Complexity of Abstracts and Titles in Highly Cited Journals. *Perceptual and Motor Skills* 88, 76-86.

PART 3

Digital metadiscourse and the cultural negotiation of experience

WILLIAM BROMWICH

Metadiscourse and the gamification of ride-hailing in the platform economy

1. Introduction

The advent of the sharing, gig or platform economy, in particular the spread of ride-hailing firms such as Uber and Lyft, has given rise to new forms of digital communication. According to the drivers, the use of sign-up bonuses, ratings, promotions, competitions and non-monetary rewards is intended to provide incentives to work longer and longer hours while Uber and Lyft (the main rival to Uber in the US and Canada) progressively cut pay rates, with the online discourse intended to manage relations with the drivers primarily for the benefit of the platform. The result is what has been characterised as the "gamification" of ride-hailing, with the terminology of hiring, employment contracts and wages being displaced by the discourse of video game techniques, graphics and non-cash rewards.

Research into metadiscourse has so far focused predominantly on academic discourse, whereas the present study, based on insights provided by Mauranen (1993), Hyland (2005, 2017), Ädel (2006) and Ädel/Mauranen (2010) is intended to examine the ride-hailing discourse in terms of the use of metadiscourse devices such as hedges, boosters, attitude markers, engagement markers and self-mention, casting light on their pragmatic functions.

Although in methodological terms exchanges between the platform and the drivers constitute an occluded genre, not in the public domain, some insights into this discourse can be obtained indirectly from driver critiques of working conditions. In particular, online driver discussion forums can serve to cast light on gamification in the digital economy.

2. The gamification of ride-hailing in the platform economy

In order to contextualise the gamification of ride-hailing, it is necessary to outline the structural features of this online community since they have a significant bearing on the discourse. A recent study (Bromwich 2020) examining legal discourse in the platform economy (the gig or sharing economy) highlighted the fact that platforms such as Uber and Lyft systematically deny the drivers the status of employees. Terms such as "partners" or "driver partners" are adopted to resemanticise the relationship, with the result that the drivers are deprived of the rights typically granted to employees in bricks-and-mortar companies.

This resemanticisation was found to be a deliberate policy adopted by "gig economy" firms to enable them to evade their responsibilities as employers, with the result that employee benefits such as medical insurance, accident and injury insurance, sick leave, parental leave, training, annual leave, and pension contributions are not granted. Collective representation, collective bargaining and agreements, and the right to refer cases of discrimination or unlawful dismissal to an employment tribunal are similarly eliminated. Drivers work as independent contractors, paying their own medical and insurance contributions. This misclassification has inevitably encountered considerable resistance, with the drivers taking action in the courts, particularly in the US and the UK, for their status as employees to be recognised. The Employment Tribunal in London was highly critical of this misclassification:

> Uber tribunal judges criticize 'fictions' and 'twisted narratives' […]
>
> The employment tribunal judges who ruled that the Uber drivers are not self-employed and should be paid the "national living wage" were scathing in their assessment of the company. Among the most unequivocal sections of the judgment:
>
> Any organisation ... resorting in its documentation to fictions, twisted language and even brand new terminology, merits, we think, a degree

> of scepticism. The notion that Uber in London is a mosaic of 30,000 small businesses linked by a common ‘platform’ is to our minds faintly ridiculous. We are satisfied that the supposed driver/passenger contract is a pure fiction which bears no relation to the real dealings and relationships between the parties. (Hickey 2016: 1).

Employment Tribunal cases are not the focus of the present study but it is important to highlight this resemanticisation of the employment relationship since it has implications in terms of the discourse within the digital enterprise. In particular, the absence of an employment contract specifying the terms and conditions of employment, including working hours and pay rates, means that the platform is not in a position to determine working hours, in a sector where timing is crucial for the delivery of services. The strategy adopted by the management is to provide incentives for the “driver partners” based on psychological tricks or “gamification”, offering the chance to win prizes for reaching certain goals. The drivers are encouraged to continue driving at the end of their shift in the hope of receiving extra, with no guarantee that the incentive will be paid. The messages between the “platform” and the “driver partners” are not in the public domain so they are not available for research purposes, but the role played by this discourse strategy has been highlighted in press reports, (Scheiber 2017; Weil 2018) including this first-hand account by a “driver partner”:

> High score, low pay: why the gig economy loves gamification
>
> Using ratings, competitions and bonuses to incentivise workers isn’t new – but as I found when I became a Lyft driver, the gig economy is taking it to another level. Lyft […] is a car service similar to Uber, which operates in about 300 US cities and expanded to Canada […] last year. Every week, it sends its drivers a personalised “Weekly Feedback Summary”. This includes passenger comments from the previous week’s rides and a freshly calculated driver rating. It also contains a bar graph showing how a driver’s current rating “stacks up” against previous weeks, and tells them whether they have been “flagged” for cleanliness, friendliness, navigation or safety. (Mason 2018: 1)

In contrast with workers in a spatially defined workplace, such as a factory, office or retail space, rideshare drivers are free to choose their working hours, and the areas they intend to cover. However, this apparent freedom gives rise to a challenge for the platform, due to the need to provide services on demand with minimal waiting times. This requires "driver partners" to be managed by means of aggressive but subtle methods, i.e. with gamification.

This overview of the status of ride-hailing drivers may appear at first sight to be a digression but it is important to characterise the context in which the driver-to-driver discourse takes place. In the platform economy the "crowdworkers" who are subject to aggressive micromanagement by means of gamification respond with bewilderment when they are unable to make sense of their ratings or pay rates that are not fixed in advance, and turn to other drivers for advice. The drivers set up alternative channels of communication, under a cloak of anonymity, and metadiscourse plays a key role in this peer-to-peer discourse. The discourse under examination consists of over 100 pages of material taken from the Uber People discussion forum (Uber People 2018), set up by the drivers to combat the isolation and alienation associated with working as a ride-hailing driver.

3. Uber people and Hyland's metadiscourse model

The first part of Hyland's model of metadiscourse concerns *interactive* resources, by which the writer seeks to guide the reader through the material, with the focus on written texts. Although the comments on Uber People are in writing, they present a range of features commonly found in spoken texts, since the aim of the forum is to promote online discussion replicating informal conversation, albeit asynchronous. On a cline between formal written discourse and informal spoken discourse (Halliday 1989), the forum positions itself close to the spoken end, due to the informality of tone, the brevity of the comments, rarely exceeding a total word count of 100, the reliance on colloquialisms, contracted forms and occasional expletives, the limited lexical range and low lexical density, along with the grammatical intricacy that Halliday identifies as typical of the spoken language. Hyland/Jiang (2017: 3) note that one of Biber's key findings (2006) was that spoken registers are heavily stance-laden, and evidence will be presented in this connection in relation to the driver discussion forum. This is not discourse that is "written to be spoken" like a political speech on autocue, a news broadcast or academic paper, nor "spoken to be written" as in the case of a courtroom verdict, but rather "written as if spoken". Hyland has noted that "[t]he overwhelming majority of metadiscourse research focuses on written genres, although spoken discourse has attracted increasing attention in recent years" (Hyland 2017: 26), whereas the present study is intended to focus on this "written as if spoken" hybrid genre. The range of *interactive* and *interactional* resources in Uber People, the Uber Driver Discussion Forum, will now be examined, applying the model outlined in Hyland (2005, 2017) and Hyland/Jiang (2016).

3.1. Metadiscourse: interactive resources

<u>Transitions</u>, i.e. expressions showing the semantic relations between main clauses, are infrequent in the driver discussion forum. *Moreover, What's more, Thus, Consequently,* and *As a result* were not found, whereas *and* and *but* are frequently used between main clauses, with just one instance of *In addition*, and only one of *Therefore*, as shown in the following examples, with emphasis added in italics here and in all excerpts hereinafter:

(1) I don't do any free advertising for rideshare companies, *and* if I were to participate in this "contest," all I'd do would be to activate my amp, then throw it in the glove compartment where it can illuminate, *but* where nobody can see it.

(2) I don't know that I would have gone for this offer *but* I might have in order to score a quick $100.

(3) *In addition*, drivers must be paid MORE for rides where they take people out of the city and have to deadhead back.

(4) Uber is required to pay them $17.22 per hour, *therefore* a driver will be expected to take every single ping. Expect massive deactivation.

Predictably, frame markers referring to discourse acts, sequences, or text stages, that are essential for the organisation of texts of the length of an academic paper, are almost entirely absent in the discussion forum, with no occurrences of *my purpose is, my intention is, my aim is, to conclude, in conclusion, finally* or *to sum up*. The brevity of the comments appears to make frame markers largely redundant, although the following excerpt shows they do occur occasionally:

(5) *As a side note* rematch on Lyft hits waaaaay less often than Uber. Lyft also will autoque [autocue] an airport ride if you do not have DF active or last ride turned on.

In some instances, a frame marker is used to refer to a speech act, to clarify the intention of the speaker or writer:

(6) *Not that I'm complaining* at all.

Since endophoric markers refer to information in other parts of the text, the brevity of the comments in the forum make such markers largely redundant. In the following, *aforementioned* is used for comic effect, with a stark contrast between the colloquial expressions preceding it and the formal register denoted by the endophoric marker:

(7) This is something I cannot care less about.
No. Why not? Because no.
Do you have water?- No.
Can I smoke in your car? –No
Can I puke in this?-No
Why?-Because EfU!
Learn to say "no" without any explanation or apology.
I was referring to passengers with violent reactions, nothing to do with saying "no" to any of *the aforementioned fun activities*.

In the following, endophoric markers are used to refer to a previous post by the driver:

(8) *As I said in another thread,* New York City Uber drivers are now employees.

(9) If one looks at the whole picture, *like you said* “it’s completely unprofitable, you get the ugly, the bad, the good and the great rides, if you do enough rides, then you will have the ****ty one and the good one, and that includes the destination filter.

This brings other voices into the discourse and creates a sense of community and commonality of interest.

Evidentials, which are devices referring to the source of information from other texts, clearly play a key role in academic writing. While they are not well represented in the Uber People, they do in fact make a number of appearances, particularly as a link to an electronic source, as shown in the following excerpt:

(10) NYC passes minimum pay for Uber and Lyft drivers https://www.google.com/amp/s/www.engadget.com/amp/2018/12/04/nyc-minimum-pay-wage-uber-lyft-drivers/

In one instance, the drivers disagree about whether a claim about a company constitutes defamation, while pointing out that political speech in the United States is protected under the First Amendment:

(11) *Lmao. You cannot sue people for sharing opinions. Ever heard about the Constitution? Freedom of speech?*

(12) *Political speech, publishing false statements someone committed a crime is illegal and carries automatic damages.* There are *four other statements* that carry automatic damages, can’t remember them all but I think they are: *falsely publishing a person’s business is bad, a woman is barren and a woman committed adultery*. *These categories of false statements* do not require the element of malice for damages. *And they are certainly not political speech which is guaranteed under 1A.*

At one point a driver requests evidence in support of a claim made by another driver, a request that might be considered to be an evidential:

(13) True, but *state where the rule specifically establishes* that drivers are employees rather than just establishing a minimum wage.

Finally, what might be called a *negative evidential* is to be found, with the authority of the driver's claim resting on a reference to *this rule*:

(14) Castaneda7189 said:
Definitely have to agree with you. No longer considered IC.
There is nothing in *this rule* that states that we are employees.

Code glosses provide guidance for the reader in grasping ideational meanings, including *e.g., such as, in other words, this means,* are not well represented in the discussion forum, even though a painstaking reading of the data does produce isolated instances:

(15) If you're not concerned about the scammer getting mad and attacking you in the car, you could Long haul them over the city by pretending that your card doesn't work in every ATM you try. *In other words,* turn the scam back on them.

In the following exchange a code gloss is used to correct a misunderstanding on the part of another driver:

(16) *There is nothing in this rule that states that we are employees.*
The word WAGE *means* employee.

To sum up this overview of *interactive resources* as outlined in Hyland's model, in the driver forum they do not appear to be well represented at all, bringing to mind Biber's finding that spoken genres are more heavily stance-laden (Biber 2006). Since the comments posted are "written as if spoken" then it is not surprising that they make scant use of textual references and devices intended to guide the reader through the text. A far more fertile field of investigation in terms of metadiscourse in this genre is that of *interactional resources,* intended to involve the reader in the argument and to build a relationship between reader and writer, and the discussion now turns to these resources.

3.2. Metadiscourse: interactional resources

Writers and speakers use <u>hedges</u> to withhold full commitment to a proposition, with a range of terms such as *might*, *possibly*, *possible* and *about*.

In the following excerpt the driver is discussing the fate of other drivers falling victim to a scam that is giving rise to a heated debate. To shield himself from charges of being heartless or failing to show support for his fellow drivers, he includes the hedge *kinda* that is intended to soften the blow he is about to strike:

(17) I *kinda* feel like these drivers deserved to get their money taken from them. If they'll fall for that, they may, in fact, fall for anything!

In the next excerpt the driver uses two hedging devices to highlight the degree of uncertainty arising from how to deal with the scam:

(18) I would *probably* have said I never carry a wallet when I drive for Uber makes not getting robbed easier that way, but the poverty thing *sounds like* it would work just as well.

As regards Uber/UberEats, the drivers are acutely aware of a lack of reliable information, leading them to engage in speculation and guesswork, giving rise to the need for a range of hedging devices:

(19) Uber charges the restaurant 30% off every order, the driver takes a 32-33% service fee off the top of every piece of the fare (time, distance, drop-off, & pick-up fee), and they charge the customer a flat rate. Other than all the lawsuits, *I don't see them* losing much. *I'd imagine* they are raking it in hand over fist with those charges.

Due to the asymmetrical information that the drivers are dealing with, when figures are given, they are often accompanied by the hedging device *probably*:

(20) You are looking at a worst case scenario, long trip on highway, you lose 20%. What about a four-mile trip in heavy traffic during rush hour? when all is said and done, *probably* more like a 5-10% cut on average, still terrible but not 20%

The gamification strategy adopted by the company means that the drivers are given the chance to win a prize if they provide an unpaid service such as displaying an amp (an illuminated sign on the vehicle with the Lyft logo that greets the passengers by name as they get in) but the drivers have no idea of the odds of winning, nor of the cost to the company:

(21) *I think* your "odds of winning " is too low. *Probably* 2X the odds of winning the lottery would be more accurate. They cut my pay $10 per 100 miles of paxs in car and then offer this ridiculous program and in Los Angeles, 100 miles is nothing. What they spend in cash prizes is *probably* less than they would pay an advertising company and more people will be exposed to a Lyft car picking up a person.

In some cases, the risk of picking up unidentified passengers is pointed out in the driver forums:

(22) Yeah you're never getting a tip from third party ordered rides, least I haven't. I don't take those any more, those are all rider no shows because the rider on the account doesn't show unless it's a good fare then I'll take it *probably*. That's a *security risk* taking those riders.

The uncertainties and insecurities that pervade the world of Uber drivers are reflected in the use of *probably* along with the nominalised form, *security risk*.

Boosters emphasise writer commitment to a proposition: *it is clear, in fact, definitely*.

(23) Lol. You think Uber will pay $17.22 to drivers who game and cherry pick? *Definitely* have to agree with you. No longer considered IC they will be required to play by Uber's rules in terms of cancellations and acceptance rates. You can't be expected to get paid 17.22 an hour by just sitting there declining every ping […] *Definitely* 17.22 per driver per hour is no joke.

Boosters can be used to distinguish serious comment from jokes, though in this case the driver is making a joke at the customers' expense:

(24) *Seriously*, people that order delivery of McDonald's should have their info, address and profile photo on a site dedicated to Sloth.

The use of boosters may co-occur with engagement markers, aimed at bringing the reader into the discourse and eliciting a response, as in the case of this highly problematic question:

(25) Do you discriminate based on name?
I *absolutely* do...if you have some BS fake name on Lyft, auto time out.

Once again in the following a booster co-occurs with an engagement marker, expressing a strong opinion while eliciting an active response:

(26) *Obviously* you don't understand residual income. I'm not with Bounce, but residual income is awesome. *Should look into it* before throwing out the ignorant term "pyramid scheme".

(27) *You should stop publishing false and harmful comments* about a business. A pyramid scheme requires cash payments from recruits this is *ABSOLUTELY NOT* the case with BOUNCE.

In some cases, boosters convey a sense of despair and despondency on the part of the driver:

(28) This is *by far* my worst day in the last four years of doing ride share in beautiful San Diego.

Boosters are not necessarily encoded as lexical items but may take the form of punctuation, in this case, capital letters:

(29) I say prove it's a pyramid scheme. I can prove it is *NOT*. In fact it's a good company starting without globalist venture capital only local in-house start-up funds.

Boosters can also take the form of colloquialisms pertaining to the spoken language:

(30) This day sux *big time* still out grinding and anting [slaving away like an ant] cause there's nothing else to do just lucky to get a ping at all.

(31) Rematch on Lyft hits *waaaaay* less often than Uber.

Attitude markers, such as *unfortunately*, *surprisingly*, and *I agree*, express the writer's attitude to the proposition and are important for building relations between writer and reader. Metadiscourse devices of this kind can be used to show familiarity with the audience, while reinforcing shared values, membership of a group, and commonality of intent.

In numerous instances in the forum, attitude markers are used to express anger, contempt or criticism, and are almost invariably associated with negative comments:

(32) While I agree *the new rates suck* and will be cut, your analysis is very one sided. You are looking at a worst case scenario, long trip on highway, you lose 20%. What about a four mile trip in heavy traffic during rush hour? When all is said and done, probably more like a 5-10% cut on average, still terrible but not 20%.

(33) The *idiocy and greed* has killed my market.

In this case *Uber* has been replaced with a pejorative form, *Goober*, clearly an attitude marker. The parting shot also expresses contempt:

(34) I decide to open the Uber Eats App to see if it was working and - lo and behold - I found the answer. *Goober* had increased their service fee so high that no one was ordering. I mean really, would you order an $8.00 dollar burrito and then pay *Goober* $7.99 to have it delivered?? *Unbelievable***.**

Attitudes to the company are overwhelmingly negative and strongly worded:

(35) So, the plan is to push rates lower for UEats drivers and see how UEats drivers respond while company saves money. Plus, when there is a need, i.e. delay in pickup, force delivery to UberX driver who is waiting long

desperately for a ping by showing a guarantee which is still lower but saves money. Uber is *a ruthless company.*

Attitude markers can perform the dual function of expressing disdain towards both the company and the customer:

(36) I wonder why people don't tip? I bet customers think the driver gets the full delivery fee. *Hah.*

An attitude marker may consist of a sequence of negative terms tightly bundled together into a crescendo of disdain, leaving the reader in no doubt about the writer's stance:

(37) I'm off 9 deliveries from yesterday in the same amount of time. I guess *Goober* is counting on the higher service fees over volume. Also had two eaters *complaining* about the increase. *It amazes me how stupid Uber is. They consistently piss off their drivers* and now *they've decided to piss off their customers. They'll never make money at this rate.*

This excerpt is characterised by a blend of propositional content, such as the drop in the number of deliveries, the higher service fees and the complaints, together with evaluative content, intended to make the text more persuasive, such as the claim that Uber is stupid and that they antagonise their drivers and customers. The prepositional and evaluative content is so closely intertwined as to be inextricable.

Criticism of the company is evident also in the following post, that provides both propositional and evaluative content:

(38) Decided I didn't like providing free advertising any more for a company that *cuts my pay randomly* and treats me in a *passive-aggressive manner.*

In the section above examining boosters it was argued that punctuation can be used for the purposes of metadiscourse. This appears to be true also in the case of the following attitude marker, with the driver using triple curly brackets to distance himself from the claim, as if ostensibly denying that it is true, while quietly acknowledging the veracity of the statement. The meaning expressed in spoken interaction by means of intonation and tone of voice is encoded here typographically. An account of metadiscourse considering only lexical items would most likely overlook this kind of subtle comment.

(39) Some would argue that it makes it easier for pax to find me.--
Most would argue that we don't want the pax to find us. *{{{shuffle}}}*

Punctuation is also used in the place of spelling where the writer wishes to use an expletive but is aware that a filter is in operation to eliminate terms deemed to be offensive:

(40) I don't know man, in Toronto [Lyft] could use help winning ridership over Uber and I don't mind supporting that and they seem to keep offering us $30 from time to time to have it paired with our phones though they are terrible at paying the incentive when they say they will. it always involves *two ****ing calls to Lyft* to get a decent rep who will [pay] out that bonus

In some cases, attitude markers are used in response to a post deemed to be inaccurate or misleading:

(41) *Your post* said it eliminates anyone who doesn't do 125 rides. *That's misinformation and not correct,* if you do 1 ride you get 1 entry, if you do 125 rides you get 125 entries. It's all up to you on increasing your odds of winning. No one is forcing you one way or the other. So it is fair to all drivers and if course it's better for anyone who drives exclusively Lyft.

<u>Engagement markers</u> explicitly refer to or build up a relationship with the reader, such as *consider, note that*, *you can see that*. In extract (42), the driver begins with a self-mention, then outlines an argument, and concludes with an engagement marker, expressing concern for other drivers:

(42) (Boston driver) I did my calculation on the new rates and I came up with this final decision we all gonna lose 20% of earnings over the year and if you make $50000 year 20% lost is gonna be $10000. That a lot of money. *Good luck people.*

In the next extract the engagement marker is not just a means to engender feelings of solidarity but also to actively draw other drivers into the discussion, asking for advice that would enable the driver to use the system to his or her advantage:

(43) So *has anyone done a comparison* on what the various food delivery apps charge a person? I could then focus on the app that charges customers the least. Should be more jobs that way.

An engagement marker in the form of a request for advice is to be found in the following post, highlighting the fact that the drivers are subject to asymmetrical information:

(44) For a while there, I was getting a rematch on nearly every airport ride I did, but all week and three times today I have not gotten a rematch. *Does anyone know if they changed their policy or something? Thanks.*

The following engagement marker is realised by adopting a familiar tone while paying a compliment to the other drivers:

(45) So I've always gone to Jiffy Lube for my oil changes for $79 a pop. Being that I drive as much as I do for this gig, oil changes are frequent and adding up. *Do any of you fine people have any good, yet inexpensive, recommendations* on where to go for one? Thanks.

Drivers who anticipate and respond to imagined objections raised by other drivers show an awareness of the reader and an insight into the values of the discourse community.

(46) *Some would argue that* it makes it easier for pax to find me. *I counter that* with the experiences I have had, I have an average of 1-2 Lyft no-shows per week, versus 1-2 Uber no-shows per DAY. Uber is the one that needs an amp.

In the following excerpt, the driver responds to an objection that was raised by another driver, rebutting the claim albeit in a non-aggressive manner, as shown in the parting shot intended to soften the caustic tone of his or her comments:

(47) The odds for me to win this is higher than the Calif. Lottery. *You bring up a trivial issue and totally ignored the main subject ---- Since you missed my point, I will explain again.* The so called contest is not fair to all drivers. It is

> another waste of funds. Give the drivers a fair way to make extra money. The bonuses are excellent for that. Wasting over $25,000 on a nationwide contest that I have NO CHANCE of winning. Lyft wants the amp used for advertising. This is their way of accomplishing that. What they spend in cash prizes is probably less than they would pay an advertising company […]. *Just saying.*

Another kind of engagement marker in the driver discussion forum consists of the widespread use of *insider meanings*. As pointed out by Hyland (2017: 17), communities have their own insider understandings of specific terms that carry insider meanings, reinforcing a sense of group membership. Here are two separate extracts to illustrate this point:

(48) Only way I could get my *X revenue* up to *pre EATS* was *to have the hub remove the option completely* from my app. Sounds like you are one of the drivers that gets *the closest car ping* ...congratulations,

(49) I would even say the *Uber Pro Program* is a lot more manipulative to saying that you are an employee than what went down in New York. If you damn near don't accept every ride *you get downrated on tiers* and once *you hit partner* don't be surprised that eventual *deactivation* doesn't occur… that's the real one trying to manipulate drivers as being more like employees.

Only an Uber or Lyft driver would be able to explain the meaning of these terms but the salient one is *deactivation*, that is really a resemanticisation of *dismissal.*

In cases in which engagement markers reach a certain density, this may be indicative of a full-blown argument, as in the following excerpt in which the driver attempts to elicit a response by using a range of metadiscourse devices including engagement markers, attitude or stance markers, and boosters:

(50) *Read this just so you fully understand* the residuals are very similar to insurance sales, so are America's insurance companies pyramid schemes? *You should stop publishing false and harmful comments* about a business. A pyramid scheme requires cash payments from recruits this is ABSOLUTELY NOT the case with BOUNCE. *Please prove* BOUNCE is a pyramid scheme...*prove it,* if you going to harm a company. *The article I want to post*

> *contains banned words*. So *find it yourself* just search BOUNCE rideshare San Diego.

Narrowly construed, self-mentions consist of references to the author(s) (*I/we/my/our*) but more broadly construed they can be taken to cover first-person narratives of some length. Hyland (2017: 17) argues that “metadiscourse can be realised in a variety of ways and by units of varied length, from individual words to whole words or clauses”. The important thing is for analysts to be transparent in their judgements and consistent in their coding, taking the discourse function as the object of analysis. Hyland also refers to “category overlap” in the sense that a given utterance may be characterised as self-mention, as an attitude marker, and as an engagement marker. In the framework of Uccelli et al. (2012: 5) these first-person narratives may be placed in the category of “personal genres”:

> The progress in mastering new genres or types of texts has been characterized by Martin (1989a) and Schleppegrell (2004) as moving progressively across three categories: (1) personal genres, such as narratives and recounts; (2) factual genres, such as procedures and reports; and (3) analytic genres.

In this instance, self-mention takes the form of a continuous narrative intended to bring the reader into the discourse, establishing a connection with the personal experience of the narrator:

(51) For only the second time in 7,000 rides, *I kicked passengers out of my car* last night. The ride was 2.2 miles long and we didn’t even make it a mile before *I pulled over and told them to get out*. *I then immediately reported them* to Uber and they are currently under investigation. *I knew I was in trouble* when *they made me wait* for five minutes and then one of them came into my car carrying a cup of wine that was filled to the brim. Thing quickly went downhill from there once *I instructed her to get rid of it. It amazes me how shi**y some of these people treat us: I don’t think* they have any idea that *we are paid like peasants.* Anyhow, avoid that white trash loser at any cost!

This post elicited responses from other drivers that included self-mention, engagement and attitude markers, constructing a “them and us” dichotomy between passengers and drivers *(these pax / their nonsense / they learn their lesson):*

(52) *Thanks for the heads up and sorry you went through that*. "Jimi" won't be riding with me anytime soon--not that I do much business in Vista anyway.

(53) *These pax are so f’n entitled. Kudos on putting your foot down on their nonsense. Hopefully they learn their lesson.*

First-person narrative is used in at least one other instance to provide pointers on how to deal with risks. Since the regulatory framework for ride-hailing is unclear, constituting a grey area of the law, the driver in this case is wary of the regulatory authorities. In this case the self-mention is extended to identify also the particular location, rather than just the individual, as otherwise it would not be possible for other drivers to provide any input. As a result, the driver makes use of self-mention, including a screen name (*Socals Land Shark*, a reference to Southern California), credentials, attitude markers (with a self-deprecating reference to *ants,* used by Uber drivers to refer to each other), then engagement markers such as *dear sandiegan ants*:

(54) To *my dear sandiegan ants, let me introduce myself, I’m an ExGypsy ExTaxi Current Gray area one-man Livery Driver* with extensive knowledge & experience on all local state and federal transportation for hire regulations (and anti-regulation “maneuvers”) But only drop off experience in San Diego Airport. Coming up *I have to do a Pick up on your turf. My gut instinct* tells me to park in the furthest part of the parking or garage then walk *my customers* back from the terminal. *Any input is much appreciated.* Yours Truly: *Socals Land Shark*

This broadly construed conceptualisation of self-mention may be applied to other posts on the forum, warning Uber and Lyft drivers of common scams. Once again self-mention co-occurs with attitude markers (*really shady fellow* and *Fuber*) and engagement markers *(I luv u all),* with an exchange of personal experiences and warnings:

(55) *I read* on one of the threads how a pax tried to get the driver to give them cash and the pax would give them money via a huge tip in the app. *I picked up a really shady fellow* today named ‘Brandon? In South Dallas. He gets in and

> sez 'Yeah so I kinda got a favor to ask you man'. He said he lost his wallet and has no money and needs a couple of hundred dollars for an emergency. He wants me to go to an ATM and hook him up and in return he will give me that plus $100 more in the app. Firstly, *I learned from UP that this is a common scam.* Secondly, *I learned from UP that Fuber limits the amount of tip a pax can give us*. *I don't know that I would have gone for this offer but I might have in order to score a quick $100*. *It might not have occurred to me* that a credit card on file with Uber might not be any good. So thanks. *I luv u all.*

The engagement markers turned out to be effective, as other drivers joined in the discussion with their own experiences and suggestions for how to deal with the dangers inherent in this scenario:

(56) How did you end up turning it down? *I've had it happen twice,* the first time *I called the guy out on the scam* and he jumped out of my car at a stoplight. The second time, the guy was much larger and not someone I wanted to make upset, so *I claimed poverty* and told the guy *I didn't have any money in the bank* - hell *that's why I'm doing rideshare*. *I'll do the same next time* should it occur.

In pragmatic terms a discussion of this kind can perform an important function in helping drivers to ensure their own safety, bearing in mind that they are driving alone at all hours of the day and night, and less likely to be able to rely on the kind of face-to-face interaction between drivers waiting at a regular taxi rank.

4. Concluding remarks

The metadiscourse on the driver discussion forum, enabling the drivers to establish their credentials, create a sense of community, negotiate a stance with their readers, give and seek advice, and make an attempt to deal with the situation of asymmetric information in which they find themselves performs a number of pragmatic functions and these functions have been the primary focus of this study, in a qualitative and ethnographic (Bhatia 2015: 9) rather than quantitative perspective.

Moreover, "The fact that metadiscourse is a pragmatic category also means that all items should be examined in their sentential contexts to ensure they are performing metadiscourse functions" (Hyland 2017: 18). As argued by Hyland (2017: 19), "[t]o have any descriptive and explanatory power at all, metadiscourse must be rhetorical and pragmatic, rather than a formal property of texts". Rather than adopting a narrow *text-centred* view of metadiscourse, in connection with the driver discussion forum, a broader more *interpersonal* conceptualisation (Mauranen 1993) is undoubtedly more fruitful, providing insights into the dynamics embedded in the discourse, showing how the writer uses metadiscourse devices to "bracket the discourse organisation and the expressive implications of what is being said" (Schriffin 1980: 231, quoted in Hyland 2017: 19).

A close reading of the forum posts revealed that the *interactive* or text-organising features that are predominant in academic papers played only a minor role in the discourse, mainly due to the brevity of the posts, that replicate features of conversational exchanges, albeit in asynchronous mode. On the other hand, the study highlighted the constant use of *interactional* resources, to the point that the discourse could be considered to be stance-laden, in Biber's terms. The "ants" as they choose to describe themselves, bringing to mind Durkheim's concept of *anomie*, working in isolation and high-risk situations, dealing with the fact that *these pax are so f'n entitled*, while being denied the status of employees by *Uber/Goober/Fuber*, and subject to a wide range of gamification techniques, respond to their sense of isolation by seeking to construct an online community where they can exchange views and recount their experiences to other like-minded drivers. This digital forum gives them the chance to warn other drivers of work-related risks, while asking for practical advice on a range of issues, and seeking to deal with the situation of asymmetrical information in which they find themselves. Metadiscourse appears to provide a range of devices by which they seek to build relations with other drivers, at times giving rise to argument and disagreement, but also to a climate of trust and solidarity.

References

Ädel, Annelie 2006. *Metadiscourse in L1 and L2 English*. Amsterdam: John Benjamins.

Ädel, Annelie / Anna Mauranen 2010. Metadiscourse: Diverse and Divided Perspectives. *Nordic Journal of English Studies* 9/2, 1-11.

Bhatia, Vijay 2015. Critical Genre Analysis: Theoretical Preliminaries. *Hermes* 54, 1-12.

Biber, Douglas 2006. *University Language. A Corpus-based Study of Spoken and Written Registers.* Amsterdam: John Benjamins.

Bromwich, William 202. The Sharing Economy: Resemanticising the Enterprise. In Tessuto, Girolamo / Bhatia, Vijay / Breeze, Ruth / Brownlees, Nicholas / Solly, Martin (eds) *The Context and Media of Legal Discourse.* Newcastle-upon-Tyne: Cambridge Scholars, 118-135.

Halliday, Michael A.K. 1985. *Spoken and Written Language*. Oxford: Oxford University Press.

Hickey, Shane 2016. Uber Tribunal Judges Criticise "Fictions" and "Twisted Language". *The Guardian* 28 October.

Hyland, Ken 2005. *Metadiscourse. Exploring Interaction in Writing*. London: Continuum.

Hyland, Ken 2017. Metadiscourse: What is it and where is it going? *Journal of Pragmatics* 113, 16-29.

Hyland, Ken / Jiang, Feng Kevin 2016. Change of Attitude? A Diachronic Study of Stance. *Written Communication* 33/3, 251-274.

Martin, James R. 1989. *Factual Writing. Exploring and Challenging Social Reality.* Oxford: Oxford University Press.

Mason, Sarah 2018. High Score, Low Pay: Why the Gig Economy Loves Gamification. *The Guardian* 20 November.

Mauranen, Anna 1993. *Cultural Differences in Academic Rhetoric. A Textlinguistic Study*. Frankfurt am Main: Peter Lang.

Scheiber, Noam 2017. How Uber Uses Psychological Tricks to Push its Drivers' Buttons. *New York Times*, 2 April.

Schiffrin, Deborah 1980. Meta-Talk: Organizational and Evaluative Brackets in Discourse. *Sociological Inquiry* 50/3-4, 199-236.

Schleppegrell, Mary J. 2004. *The Language of Schooling. A Functional Linguistics Perspective.* Mahwah, NJ: Erlbaum.

Uccelli, Paola / L. Dobbs, Christina / Scott, Jessica 2012. Mastering Academic Language: Organization and Stance in the Persuasive Writing of High School Students. *Written Communication* 30/1, 36-62.

Digital resources

Uber People. www.uberpeople.net Uber Drivers in San Diego, April 2018. Last accessed 20 December 2018.

Weil, David 2018. *Gig Economy is No Excuse for Lax Protections for American Workers*.

http://thehill.com/opinion/finance/383334-gig-economy-is-no-excuse-for-lax-protections-for-american-workers?amp&__twitter_impression=true

CINZIA SPINZI

Voicing otherness: A metadiscoursal analysis of digital campaigns across English and Italian

1. Setting the scene

Social media and digital platforms have become a primary source of news in the digital age in that they expand our reach more quickly, and on a much bigger scale than previously, through words, pictures, and videos, thus empowering individuals to disseminate their experience, share their voices, and shape their own stories. Ranging from self-narrating stories to videos, digital campaigns, and short documentaries, migration is one of the main topics fueling digital platforms (for narratives in digital museums see Spinzi/Zummo, forthcoming; for short documentaries see Rizzo/Pensabene 2021), which are then used to counteract mainstream perceptions of migrants, where they are seen as either threatening hordes or agentless victims.[1] As a matter of fact, as a result of the first economic and consequent migration crisis, and the increase in terrorist attacks by second- and third-generation migrants, there has been a recent exacerbation of anti-immigration sentiment in Europe. Perceptions of ethnic diversity have begun to be associated with threats, notions of integration and inclusion have been problematized at their roots and, consequently, so has the very concept of citizenship. The consequences of policies or rhetoric of migrants' dehumanization is that they have then been deprived of human rights.

Against this backdrop, the present research contributes to the concerted efforts of both the United Nations Human Rights Council and the European Union to *re*-humanize the migrant figure providing

1 For an in-depth study on the use of aesthetic discourse as a way to translate voices of migrants, refugees, and marginalized people see Rizzo/Seago 2018.

platforms for migrants to communicate their own stories as opposed to statistics and mainstream news. Digital campaigns therefore become a powerful tool for blunting the ethnic-based stigmatization of immigrants, with a view to shifting from negative feelings of hate and division to solidarity. Hence, the present research responds to the tendency towards viewing refugees as victims, and looks at digital campaigns as transnational zones, responsible for breaking down conservative inclusion and isolation dichotomies, such as 'us and them', 'here and there', and 'inside and outside' national borders. From this perspective, metadiscourse, intended as "the author's rhetorical manifestation in the text" (Hyland 2005: 1) plays a crucial role in that it allows an understanding of how stories are portrayed, and the stance that is adopted, together with methods of public engagement.

The premise to the study is that a thorough knowledge of the cross-linguistic and cross-cultural variations of interpersonal meanings, and connected pragmatic features, can back up cross-cultural understanding and help comprehend links between migrants, narratives, and audiences. In brief, the research aims to identify the metadiscoursal elements, if any, that give the migrants a sense of voice which narrators rely on in order to engage with the addressees. Secondly, the paper seeks to compare the English and Italian texts to verify whether the metadiscoursal devices vary or not. The analysis, conducted through a small pilot corpus downloaded from the multilingual digital platform "I am a migrant",[2] also draws on insights from intercultural studies (Hofstede 2001; Katan/Taibi 2021) given that culture discloses through language.

Results show how a comparative analysis of interpersonal devices in digital campaigns offers insights, not only into the way in which culture is conveyed and transmitted via migration discourse, but more specifically into how institutions construct counter-narratives across languages and how the audience is engaged in discourse. Dissimilarities which emerge in the rhetorical choices of both corpora may find their *raison d'être* in the cultural differences which are featured in each language.

---

[2] Available at <https://iamamigrant.org/about> (last accessed July 2021).

2. Metadiscourse, migration, and translation in the literature

Metadiscourse offers ample scope for linguistic analysis from various perspectives. To mention just a few, contributions vary from culture-based (Adel 2006; Mauraneen 2007) to disciplinary-based investigations (Dahl 2004; Hyland/Tse 2004) to its quite recent application of MD to L2 undergraduate writing (Bogdanovic/Mirovic 2018). The bulk of the literature on MD – also known as 'metatalk' (Schiffrin 1980) or 'text reflexivity' (Mauranen 1993) – mainly concerns academic discourse with a number of factors (i.e. cultural conventions and genres) affecting the choice of these tools (Adel 2006). Since Hyland's claim for more research from a comparative perspective (2005, 124), a number of studies (Neff/Dafouz 2008; Suau 2010; Masi 2013) have also stressed the relevance of metadiscourse strategies for a thorough investigation and comprehension of rhetorical conventions across fields of specialization, genres, and languages. The common thread in this line of research is the emphasis on scientific discourse and its popularization. Following the less explored line of research in the interpersonal field of language (Catenaccio 2020), this study attempts to apply a metadiscoursal framework to migrants' digital campaigns from a contrastive perspective.

Research in the field of migration narratives is extensive, with a focus on different aspects, such as the identification of discursive features of asylum seekers' stories told during asylum hearings which are shaped by the institutional setting (Blommaert 2001; Zambelli 2017). Further research focuses on experiences of displacement and endurance (De Fina/Baynham 2005; Slootjes et al. 2018); on strategies of identity construction (De Fina 2003; Catedral 2018); and, finally, on experiences of trauma compared across languages and cultures (Guido 2018). The ultimate aim of this is the development of a 'hybrid ELF mode' of intercultural communication that experts can utilize when working in asymmetric migration encounters. This long-standing research – as noted by Catenaccio (2020: 88) – is primarily concerned with the logical-experiential configuration of the narratives (ideational or experiential metafunction in functional grammar, Halliday 1994:

106) rather than with the interpersonal dimension. Drawing on fieldwork carried out in the southern Italian area of Salento, Catenaccio (2020) gives insights into rapport-building strategies in semi-structured interviews of refugees assumed as being encounters of reduced power asymmetry. The study shows that the discourse markers analyzed – e.g. cognitive verbs such as *know* and *understand* – perform a number of tasks. These verbs, matched by the Italian *capito*? are used to check the attention required as well as to share empathy with addressees and to build a relationship with them. An interpersonal approach is also adopted in two other studies which are relevant to this research: Kasapoğlu/Kalmus' (2020) analysis of the Syrian refugees' stance and Spinzi/Zummo's investigation of migrants' narratives in a digital museum. If the former shows that the dichotomous construction of *I* versus *them* is affected by the two categories of 'space' and 'time' in refugees' stories, the latter identifies expressions of affect in stories elicited in less hostile environments than asylum hearings. Spinzi and Zummo's research has pointed out that in both languages positive affect is foregrounded even though negative appraisal is critical to the construction of compassionate stories, above all in Italian narratives.

These studies undoubtedly opened up the strand of research on the interpersonal metatalk geared towards rapport building of migrants' narratives (e.g. interviews or stories), investigated in this study as a means to raise awareness against "threat narratives" (Dempster/ Hargrave 2017), which feed xenophobia and discrimination.

3. Metadiscourse framework

Metadiscourse is an umbrella term which identifies specific language devices used by the author of a text as signposts to organize it, as well as to manage the interactions or relationships with the reader of the text itself. In other words, this approach emphasizes the essence of interaction in voice construction (i.e. stance) and looks at the author's position in the text, his or her attitude towards what is being said or written, as well as towards the audience (i.e. engagement; Hyland 2005; 2008; 2017). Metadiscourse is related to, and varies, according to genre, i.e. the socio-rhetorical context in which it is used, which presupposes a specific purpose and audience.

Over the past years, a range of metadiscourse taxonomies has been provided which classify metadiscourse devices differently (Crismore et al. 1993; Hyland 2005, Ädel 2006 to mention a few). Starting from Vande Kopple's approach (1985), Crismore et al. were the first to offer a more comprehensive and clear taxonomy by identifying textual markers as those devices which look at the organization of the text, and interpretive markers as those tools which help "better understand the writer's meaning and writing strategies" (Crismore et al. 1993: 47). According to Hyland (2005), this classification was still imprecise mainly because of the syntactic parameters, not functionally-oriented, upon which Crismore et al. based their taxonomy. Hyland's model, considered for this analysis, foresees two macro categories, interactive and interactional, each with their own sub-categories, as displayed in Table 1.

CATEGORY	**Function**	**Examples**
INTERACTIVE	***Assists in guiding the reader through the text***	***Resources***
TRANSITIONAL	Indicates relations between main clauses	In addition, but, thus
FRAME MARKERS	Discourse acts, stages and sequences	Finally, my purpose
ENDOPHORIC MARKERS	Indicates information in other part of the text	As noted above,
EVIDENTIALS	Indicates information in other sources	Crawford states
CODE GLOSSES	Elaborates definitions of words and phrases	Namely, such as, e.g.
INTERACTIONAL	***Involves the reader in the text***	***Resources***
HEDGES	Withhold commitment and open dialogue	Might, perhaps, possible

BOOSTERS	Indicates certainty or close dialogues	In fact, definitely
ATTITUDE MARKERS	Express writer's attitude to proposition	Arguably, unfortunately
SELF-MENTIONS	Explicit reference to the author	I, we, my, me, our
ENGAGEMENT MARKERS	Explicitly builds relationships with reader	You can see that, note

Table 1. Model of Metadiscourse (adapted from Hyland 2005).

The 'Interactive' grouping comprises five types of resources which are used to maneuver textual elements to guide the receiver through the unfolding text. 'Transitional' highlights the meanings of main clauses and may set up additional (e.g. *and*, *furthermore*, etc.), causative (e.g. *because*, *thus*, *consequently*, etc.), and contrastive relations (e.g. *similarly*, *but*, *on the other hand*, etc.). 'Frame markers' include signalling words performing a variety of functions, i.e. to sequence (e.g. *first*, *to begin with*, *finally*, etc.), to mark moves in discourse (*at this point*, *in conclusion*, etc.), to state goals (e.g. *there are some reasons*, *my purpose is*, etc.), and to shift topic (e.g. *now*, *well*, *back to*, etc.). 'Code glosses' are the means by which receivers may understand the writer's intended meaning (e.g. *namely*, *for example*, *such as*, etc). 'Endophoric markers' refer to pieces of information previously affirmed in the text (e.g. *as mentioned above*, etc). Finally, 'evidentials' highlight the sources of information (e.g. *according to*, etc.).

When authors want to build an addresser/addressee relationship, 'interactional' resources are mainly exploited. These devices are related to strategies of stance, the textual voice, and engagement – namely how writers present themselves and express their opinions and judgements (Hyland 2005: 176). 'Hedges' (e.g. *perhaps*) are items that mark the addresser's subjectivity about the propositional content whereas 'boosters' (e.g. *definitely*, *obviously*) are emphatic items which convey certainty by challenging alternatives. Boosters, together with hedges, are considered to be engagement and stance elements. 'Attitude markers' unveil affective attitude by expressing surprise, agreement, importance, etc. 'Self-mentions' uncover the significance of the author's presence in the text through the use of personal pronouns and possessive adjectives. Lastly, ‘engagement markers’ (e.g. *see*, *note*, *you know*, etc.) explicitly involve readers into the text making it more interactional.

3.1. Data and methodology

"I am a migrant"[3] is a platform developed by The International Organization for Migration (IOM) and part of the UN TOGETHER initiative, an international campaign supported by the United Nations and the Joint Council for the Welfare of Immigrants, with a view to disrupting negative stereotypes of migrants by supporting diversity and integration into society. Migration digital platforms, such as is the case with “I am a migrant”, a multilingual website publishing personal accounts of peoples’ migratory experiences, constitute a space for intercultural encounters and experiences. They act as safe platforms for story-telling and transactional communication, and thus have the burden of ensuring non-politicized spaces for encounters of mutual respect and narratives. Given the list of open questions participants are asked to answer in the ‘Call to Action’ section of the website, these narratives are considered semi-elicited stories whose intention, as explicitly stated on the website itself, is to help people understand the real meaning of words such as integration, multiculturalism and diversity. These guiding questions, apart from personal information such as country of origin and host society (Italy in the case of the narratives explored here), mainly focus on opinions, challenges faced, and advice to give and, thus, involve a noteworthy interpersonal component. Furthermore, since the final aim is gaining credibility and debunking false negative myths, rhetoric becomes part of discursive persuasion. As a matter of fact, metadiscourse contributes to rhetoric in that it “promotes logical appeals when it explicitly links ideas and arguments; it implies credibility of the writer’s authority and competence; and it signals respect by acknowledging the reader’s viewpoint” (Gholami et al. 2015: 60).

[3] Available at <https://iamamigrant.org/about> (last accessed July 2021).

The data for this research consists of twenty personal accounts narrated by ten migrants from different countries. Ten stories are written in English and the same stories are re-written in Italian, hence, in this research, they are considered as translated texts. The English dataset amounts to 3,335 words and the Italian sample amounts to 2,992 running words. The corpus is small but includes narratives presented in both languages and functions as a pilot corpus. The small size of the corpus allows the researcher to verify the use of a very recent web-based analysis tool for the quantitative metadiscoursal analysis, i.e. Text Inspector (www.textinspector.com).[4] Among the utilities offered by this technological tool, the 'MD Analysis' function was mainly used to extract all the interactive and interactional categories starting from the English dataset. The aim was to give a comprehensive overview of the metadiscoursal devices used by migrants when describing the realities – both positive and negative – of arriving and living in the host country. Afterwards, all the occurrences of the metadiscoursal markers were checked manually and categorized according to Hyland's framework. Finally, the focus of the research shifted to the identification of the same MD elements in the Italian-translated corpus to explore variations, if any. Since Text Inspector interrogates only English-language texts, the quantitative analysis was also assisted by Sketch Engine (Kilgarriff et al. 2004), a web-based, corpus-analysis tool that lemmatizes and tags customized corpora with parts-of-speech tags. The two corpora were interrogated in terms of verbs, conjunctions, adverbs, and pronouns. Subsequently an intensive and rigorous manual and qualitative analysis was carried out in order to check the functional meaning of the metadiscoursal markers in their contexts in both languages, with a focus on the interactional markers. This was also made possible by the Sketch Engine function which reads parallel texts.

---

4 Text Inspector was created by Stephen Bax, Professor of Applied Linguistics at the University of Bedfordshire, and is also supported by its academic partner, The Centre for Research in English Language Learning and Assessment (CRELLA).

4. Analysis

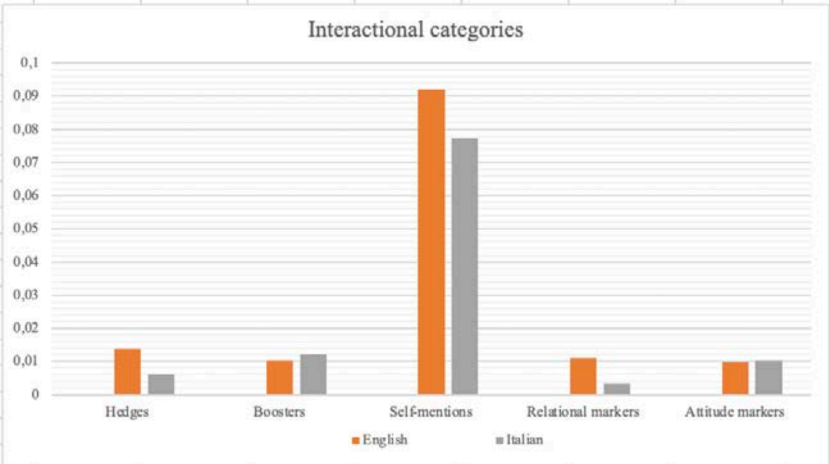
Results from quantitative analysis reveal that metadiscoursal markers amount to 19.77% of the English texts and 16.09% of the Italian ones. Within this total, the percentage of interactional markers is higher than that of the interactive devices, with a total of 13.07% in the English texts and 10.86% in the Italian ones. This is due to the major communicative functions of these texts, namely expressive and conative ones, given that these stories have the final goal of persuading addressees to change their attitudes towards migrants.

The total number of interactive tools is unevenly distributed among the different sub-categories, with logical connectives as the most frequent category. This finding was expected because the other four types of interactive tools are mainly used in those texts where quotations, explanations, elaborations, and external references are more relevant as, for example, in academic discourse. Transitionals are mainly used because they perform the function of connecting steps in the narration and, in doing so, persuade recipients through rational appeal (*logos*). If we consider sub-categories of Transitionals, such as Addition, Comparison, and Consequence, the most frequently used in both corpora are Addition and Consequence, realized through the conjunctions *and, but, so* and *then*. While the function of the first two markers is to sequence topics in the texts, the conjunction *so* is mainly used to show that decisions are the outcomes of previous reflections or external events. The expected slightly higher percentage of the occurrence of *and* in the English stories indicates that coordination is preferred to subordination – which, on the contrary, features in the Italian style of communication. The use of *then* puts an emphasis on the chronological sequence of narrated events.

The total absence of devices which add or rephrase or elaborate information in the Italian data is due to the omissions of pieces of text where these interactive markers occur in the English data. In the first example below (omitted in the Italian data), the code gloss introduces a reference to a real situation which helps better understand what the writer has explained about cultural mediation. In the second example the code gloss serves the purpose of explaining a culture-bound term which was not found in the Italian text. The less frequent occurrence of textual connectors in Italian texts is another finding which is perfectly in line with the author-oriented communication style (Katan/Taibi 2021: 316) and, hence, less engaged in providing explicit guidance to the recipients in understanding the texts.

(1) **For instance**, an Italian policeman tried to imitate the Muezzin's call to prayer; he did not do it to offend Muslims, but for some it was seen as an insult. The policeman apologized.

(2) There is a big Italian diaspora, where they are known as "Kif kif", **which means** "look-alikes" since they were considered to be very 'Tunisian'-looking.



Graph 1. Quantitative distribution of interactional categories on the basis of their percentage in both datasets.

Moving onto the interactional categories, self-mention is the most widespread interactional tool, followed by hedges, boosters, relational markers, and attitude markers in the English texts. As Graph 1 displays, variation is visible across both languages: hedges are more recurrent in English (1.37%) than in Italian (0.60%) and the opposite is true for boosters (1.04% in English *vs*. 1.20% in Italian), relational markers are more frequently used in English (1.11%) than in Italian (0.33%), and attitudinal devices in the Italian texts (1.04%) slightly exceed those in the English texts (0.98%). All these devices contribute to constructing evaluative and attitudinal meanings, and texts inevitably take on a more hybrid shape, encompassing a persuasive scope rather than an informative one. By the use of the first-person pronoun and possessive adjectives, self-mention is mainly used to construct migrant identities with respect to, firstly, their past and, secondly, their present life. In this way, the audience is comprehensively convinced by what is told to it through the author's integrity and goodwill. In both languages, personal reference is a clear indication of the standpoint from which to unravel the meanings expressed and, at the same time, narrators are allowed to seek agreement for their contribution. The less frequent incidence of self-mentions in the Italian texts is due to the higher number of occurrences of more objective and impersonal constructions. Example (3) represents a case in point, in that it illustrates how the self-mention 'I' has been rendered through an impersonal form in Italian, namely a distancing device (*È facile/It is easy*) which confers objectivity and detachment to a general evaluative statement. Similarly, in example (4), the use of the first-person pronoun 'I' in English corresponds to a general impersonal construction in Italian, where a commonly known cultural value (i.e. *studying abroad*), which is considered to be prestigious by Italian people, has been added. The purpose is to engage the reader to share this cultural assessment through universal evaluation and is reinforced by the implicit objective modalization (*sicuramente/ surely*).

(3) When I saw Verona in Italy for the first time, I knew I made the right choice. The city is marvelous, breathtaking! Every day here is a celebration; **I feel inspired** by every building I see.
IT: Quando ho visto Verona per la prima volta, ho capito subito di aver fatto la scelta giusta: è meravigliosa! **È facile sentirsi ispirati quando si è circondati** da un'architettura di questo tipo.
BT: *When I saw Verona for the first time, I knew immediately that I had made the right choice: it is wonderful!* ***It is easy to feel inspired when*** *people are surrounded by such architecture.*

(4) **I** invested all **my** savings in this opportunity.
IT: Studiare all'estero è **sicuramente** un'opportunità da non farsi scappare, ma è anche un investimento notevole. [ADDITION]
BT: *Studying abroad is **surely** an opportunity not to be missed, but **it** is also a considerable investment.*

The hedging tools retrieved from the corpus include epistemic possibility modals, modal adverbs, and epistemic nouns which allow "information to be presented as an opinion rather than a fact" (Hyland 2011: 99) and which tend to temper its impact. In English texts the higher usage of hedges, rather than boosters, allows narrators to gain credibility by cautiously positioning themselves and by constructing an accommodating and conciliatory stance. This is illustrated by (5) (6) where the epistemic-subjective *I think* and the softener *kind of* have not been rendered in the Italian text where, on the contrary, the use of modalization of usuality (*sempre/always*) confers more assertiveness to the statement. Similarly, in (7) the use of the conditional (*would rather*) in English is replaced by the mode of certainty, i.e. the Italian simple present (*preferisco/I prefer*). By constructing statements as provisional, through hedges, writers engage readers as participants in their endorsement conveying deference.

(5) My father is of Mexican descent, and **I think** that that has **kind of** shaped my need to work with marginalized populations.
IT: Ho origini messicane e ho **sempre** vissuto negli Stati Uniti: questa condizione mi ha **sempre** spinto a entrare in empatia con le comunità più emarginate della società.
BT: *I've got Mexican origins and have **always** lived in the United States: this situation has **always** pushed me to empathize with the most marginalized communities in society.*

(6) However, **I think** it is very important to never give up hope and to try to do our best to build a future.
IT: [DELETION]

(7) I am Ivorian, but I **would rather** define myself as a world citizen.
IT: Sono ivoriano, ma **preferisco** definirmi cittadino del mondo.
BT: *I am Ivorian, but **I prefer** to define myself a citizen of the world.*

(8) Arriving in a new country is always more difficult than **you could possibly imagine.**
IT: **È impossibile** prevedere quanto sia difficile cominciare una nuova vita in un paese straniero.
BT: ***It is impossible*** *to foresee how difficult it is to start a new life in a foreign country.*

(9) After Bulgaria I returned to Georgia with my wife and child, a PhD degree in Conservation and Restoration and the **will** to start my career.
IT: Una volta completato il dottorato in "Conservazione e Restauro" in Bulgaria, sono tornato in Georgia insieme a mia moglie e a mio figlio, con **tanta voglia** di cominciare la mia carriera.
BT: *After completing my PhD in "Conservation and Restoration" in Bulgaria, I returned to Georgia with my wife and son,* ***with a great desire*** *to start my career.*

The two boosters found in the Italian example (*sempre/always*), in place of the English hedges, have thus rendered the propositional content more assertive with respect to the vagueness conveyed by the English citations, whereas the expression of hope, even though hedged in (6), has been deleted. Deletion may be explained by the Indulgence versus Restraint (IVR) cultural orientation that refers to the extent to which people try to control their desires and impulses, where relatively weak control is called Indulgence and relatively strong control Restraint. Countries with higher levels of restraint such as Italy (with respect to the UK and USA), are significantly interrelated with a feeling of pessimism and negativism, in that restrictions tend to foster negative feelings and a lack of trust (Hofstede et al. 2010).

As Hyland (2005: 53) notes, the use of boosters emphasizes certainty and aids the construction of rapport by marking involvement with the topic and solidarity with the audience. Assertiveness is also achieved by the less thoughtfully construed modality (8) in Italian with respect to the epistemic modality in English, furtherly softened by the hedge *possibly*. Boosters also include the use of the future tense in Italian which matches the English *will*, lexicalised as a noun in both languages (9), but intensified in Italian by the quantitative *tanta/great*. Even though the informational content is not affected by the different use of metadiscourse across the two languages, what changes is the overall perception of the writer's stance that turns out to be more self-assured in Italian. The greater assertiveness established through the use of boosters in Italian, even where in the English data hedges are used, might reflect a higher degree of resistance and mistrust in Italian society when faced with the topic of migration. This is reinforced by the lack of the authorial presence in the Italian data, due to the absence of code glosses and the avoidance of cautiousness which allow alternative views for readers in the English texts. Therefore, in the Italian renditions, boosters help migrants to present their experience with assurance, prompting interpersonal solidarity against the caution and self-effacement construed through hedges and authorial presence in the English data.

The other interactional category is that of Engagement markers, through which migrants try to involve readers by openly talking to them. In (10), the author could have used a more impersonal pattern in English at the place of 'you' (e.g. *it is*) but the choice of the second-person pronoun also serves an engaging purpose which is more pervasive in the English corpus with respect to the Italian one, due again to the use of impersonal forms. In addition to claiming solidarity, these tools aim at setting up a dialogue with readers, voicing their concerns and expectations. This is better illustrated by (11): when sharing the difficulty of finding a job in a foreign country, the author calls the reader into question by means of an evaluative statement that cannot but be shared.

In the following English Example (12), the use of the second-person pronoun engages the reader in the co-creation of values such as individual initiative, which has been deleted in the parallel text in Italian. Hence, the Italian texts sound less engaging. Furthermore, in the English text more directives (e.g. *have to*) were found with respect to Italian, where the attitude marker *have to* was deleted and a rare case of a person marker adverb (*personally*) is used in the corpus to introduce the expression of a personal evaluative statement.

(10) **You** need to go back to school as if **you** are 6 years old again.
IT: Quando **si impara** una nuova lingua **sembra** quasi di tornare a scuola, come se **si** tornasse bambini.

BT: *When you/people learn a new language, it is almost like going back to school, as if they were a child again.*

(11) Jobs will not come knocking at **your** door for **you**.
IT: [DELETION]

(12) **You** come here alone, without friends, without a family. **You** have nothing, **you** have to start from the scratch. […]
In the end, **I have to say** I don't feel Greek or Italian.
IT: **Ti** senti **davvero** di non avere nulla. […] Dopotutto **personalmente** non mi sento né greca né italiana.
BT: *After all, I personally feel neither Greek nor Italian. […] You really feel you have nothing.*

More noticeably, through the use of attitude markers narrators express their pathos, namely they tend to influence recipients' emotions, primarily through the use of adjectives (e.g. *important*, *eager*), attitude verbs (e.g. *wish*, *would like*), and attitudinal adverbs (e.g. *luckily*, *honestly*). These tools are significant in that they transmit the writer's attitudinal position which is mainly expressed in the corpus through meanings of importance, desire, and luck, as demonstrated in the following Examples:

(13) I am studying Political Science because **I would like** to become a diplomat, and work on relations between Italy and Tunisia.
IT: Studio scienze politiche e **il mio sogno** è quello di diventare una diplomatica italiana in Tunisia.
BT: *I study political science and my dream is to become an Italian diplomat in Tunisia.*

(14) I am really **lucky** because my husband helped me navigate life in Rome. Here I am a person with **solid support, adequate** resources, a fair knowledge of Italian and I have already a hard time.
IT: **Confesso** che, nonostante me la cavi con la lingua e abbia il sostegno di mio marito per risolvere i problemi burocratici, **trovo già molto difficile integrarmi.**
BT: *I have to confess that even though I can manage with the language and I have my husband's support to solve bureaucratic problems, I already find it very difficult to integrate.*

(15) I have heard **so many stories** from the people I hosted in Lampedusa.
IT: In tutti questi anni a contatto con i migranti, **ne ho sentite di storie!**
BT: *In all these years in contact with migrants, I have heard so many stories!*

(16) Still, the first three years in Italy were very **difficult** for me.
IT: Non pensavo che vivere in un posto nuovo potesse essere un **problema**.
BT: *I didn't think that living in a new place could be a problem.*

(17) When I was in high school, we housed Burmese refugees who had been living in a refugee camp in Thailand for 10 years, which opened my eyes to **what** refugees **have to** face.
IT: Da adolescente, i miei genitori ospitarono una coppia di rifugiati birmani che avevano vissuto in Tailandia per dieci anni. Quella esperienza mi aprì gli occhi sulle **difficoltà** che i migranti **devono** affrontare per integrarsi nel paese d'accoglienza.
BT: *As a teenager, my parents hosted a Burmese refugee couple who had lived in Thailand for ten years. This experience opened my eyes to the difficulties migrants face in integrating into their host country.*

(18) After such achievements and success, **I was eager** to explore new things, so I decided to move.
IT: Dopo aver coronato una carriera di successo in Georgia, **ero pronto** a esplorare posti nuovi.
BT: *After a successful career in Georgia, I was ready to explore new places.*

In some examples, the attitudinal position is explicitly expressed, whereas other examples call for more careful scrutiny, as in the case of the Italian Example (15), where the pragmatic implication relies on the use of an exclamative to convey the meaning of 'coming across many unpleasant stories.' Strikingly, what in English is expressed in terms of 'difficulties', such as starting life in an unknown place, in Italian becomes a heavy burden lexically realized as a *problem*. The three occurrences of the word *problema* (problem) in the Italian data correspond to the word *difficulty* in the English texts. Similarly, where in Italian *difficoltà* is used, the English text becomes vaguer as in (17). Again, in (14) the addition of the culturally loaded Italian phrase *problemi burocratici* is a clear reference to one of Italy's worst 'evils' felt by those who, day after day, encounter hundreds of obstacles to achieving their goals. Gratitude for the family support received seems to be expressed in the English text where the attitudinal adjective *lucky*, interestingly, refers to the personal resources and competences acquired to face the challenges in the host country. All the resources are pre-modified by positive epithets (*solid, adequate, fair*). The Italian text paraphrases the same meanings by means of an attitudinal verb (*confess*) and by a concessive clause (*nonostante/although*) which emphatically reinforces (*trovo/I find*) the opinion expressed later in the same text i.e. *I already find it very difficult to integrate*. This may find an explanation in the two cultures' diversity, with Italian culture scoring very highly on the dimension of Uncertainty Avoidance, which refers to the extent to which people feel threatened by situations which are perceived to be unsafe or unknown (Hofstede 2003: 113).

5. Final remarks

By positioning itself at a crucial moment of our history in which isolation and inclusion appear as polarized and politicized tactics amidst a global resurgence of more extremist positions, this research has tried to identify how the voice of migrants is construed from a metadiscoursal perspective in digital campaigns across English and Italian. Undoubtedly aimed at involving the public, the objective of these narratives is the *re*-humanization of migrants who, through the telling of their stories, cease to be statistics and become human beings again. Digital platforms become sites of encounter, meeting points which must transcend the former colonial tendency to present a voiceless or objectified 'other'. This work has highlighted the crucial role of digital campaigns in the dissemination of counternarratives geared to reinforcing the view of migrants as individuals in search of "self-presentation, positioning, and stance" (De Fina/Tseng 2017: 384).

Starting with English texts, the study has firstly addressed the use of metadiscoursal markers and their distribution and frequency in both corpora, with a specific focus on interactional elements considered crucial to the construction of ways of engaging the public. Then, the analysis has looked at how the same metadiscoursal elements in their context have been re-narrated in Italian. The recent technological tool used for identifying metadiscoursal markers quantitatively (e.g. Text Inspector) has proved to be effective and useful in the preliminary phase of the survey but not exhaustive, especially in relation to the identification of attitude markers. Furthermore, the list of markers extracted by the software was not complete and this emerged through manual analysis. Therefore, a labour-intensive investigation has also been necessary, one which was supported by the use of Sketch Engine, i.e. word searches and parallel concordances. Thus, the limitations of this study, which further research based on larger data could address, concern the small number of parallel texts taken from a single disciplinary community and available on the website. Future research will help establish whether the rhetorical differences found in this parallel corpus of digital campaigns are relevant in this and other disciplinary areas, and in these, or other, socio-cultural contexts.

Following Hunston/Thompsons' (2000) distinction between the two co-existing planes of discourse, "autonomous" and "interactive", we can safely state that in both corpora the interactive plane, namely the intentional and pragmatic use of the language prevails over the informational intent.

Results have shown that the discoursal self is central to the writing process in both languages and writers cannot eschew projecting an imprint of themselves, and how they position themselves, in relation to their arguments. This has been achieved in English, more than in Italian, through a significantly higher use of self-mentions. Despite the importance of interactional and above all engaging markers in the construction of the narrator's stance, of a precise migrant's identity other than that of an 'other' or a 'victim', the same metadiscoursal expedients have been mediated in the two cultures, fully reflecting both the typical communicative style of each language and their cultural orientations. Suffice it to think about the more impersonal and detached communication style in Italian texts, although the source text aims at a more striking and overt subjectivity in English as well as at a higher degree of relationality. Or again, let us consider the presence of attitudinal lexemes (e.g. *problema*) more oriented towards pessimism in Italian. Thus, the evidence presented in the Italian data partially stultifies any room for optimism, despite need for integration and desire for inclusion. A major difference was found in the use of hedges in the English texts which were rendered with boosters in Italian. This might reveal the construction of the Italian reader as resistant to immigration issues, unlike the English reader who is presented as someone that knows and shares the difficulties of this phenomenon.

The cross-culturally mediated rhetoric may also be attributed to the migrant's need to construct a sense of belonging. Mediating is necessary for the narrator to be recognized as a member of the social group through the respect of socio-pragmatic norms.

To conclude, it can be said that the shifts detected in the use of metadiscoursal elements do not correspond to shifts at the macro-level in the global interpretation of the text, but the result is an overall different functional effect due to the intercultural mediation of the elements investigated.

References

Ädel, Annelie 2006. *Metadiscourse in L1 and L2 English*. Amsterdam: John Benjamins.

Aertselaer, JoAnne / Dafouz-Milne, Emma 2008. Argumentation Patterns in Different Languages: An Analysis of Metadiscourse Markers in English and Spanish Texts. In Pütz, Martin / Neff-van Aertselaer, JoAnne (eds) *Developing Contrastive Pragmatics: Interlanguage and Cross-Cultural Perspectives*. Berlin and New York: Mouton, 87-102.

Blommaert, Jan 2001. Investigating Narrative Inequality: African Asylum Seekers' Stories in Belgium. *Discourse & Society* 12/4, 413-449.

Bogdanović, Vesna / Mirovic, Ivana 2018. Young Researchers Writing in ESL and the Use of Metadiscourse: Learning the Ropes. *Educational Sciences: Theory and Practice* 18/4, 813-830. DOI: 10.12738/estp.2018.4.0031

Catedral, Lydia 2018. Discursive Scaling: Moral Stability and Neoliberal Dominance in the Narratives of Transnational Migrant Women. *Discourse & Society* 29/1, 23-42.

Catenaccio, Paola 2020. "Do you understand?" Interactional strategies in ELF narratives of migration. A case study. *Lingue Linguaggi* 38, 87-112.

Crismore, Avon / Markkanen, Raija / Steffensen, Margaret, S. 1993. Metadiscourse in Persuasive Writing: A Study of Texts Written by American and Finnish University Students. *Written Communication* 10/1, 39-71.

Dahl, Trine 2004. Textual Metadiscourse in Research Articles: A Marker of National Culture or of Academic Discipline? *Journal of pragmatics* 36/10, 1807-1825.

De Fina, Anna 2003, *Identity in Narrative: A Study of Immigrant Discourse*. Amsterdam: John Benjamins.

De Fina, Anna / Baynham, Mike 2005. *Dislocations/Relocations: Narratives of Displacement*. London: Routledge.

De Fina, Anna / Tseng, Amelia 2017. Narrative in the Study of Migrants. In Canagarajah, Suresh (ed) *The Routledge Handbook of Migration and Language.* London: Routledge, 381-396.

Dempster, Helen / Hargrave, Karen 2017. *Understanding public attitudes towards refugees and migrants*. London: ODI (www.odi.org/publications/). Retrieved from <https://www.refworld.org/docid/595f82e64.html>.

Gholami, Mehrnaz / Tajalli, Ghaffar / Shokrpour, Nasrin 2014. An Investigation of Metadiscourse Markers in English Medical Texts and their Persian Translation based on Hyland's Model. *European Journal of English Language and Literature Studies* 2/2, 1-41.

Guido, Mariagrazia 2008. *English as a Lingua Franca in Migrants' Trauma Narratives*. London: Palgrave.

Halliday, Michael A.K. 1994. *An Introduction to Functional Grammar*. London: Edward Arnold.

Hofstede, Geert / Gert, Jan / Minkov, Michael 2010[3]. *Cultures and Organizations: Software of the Mind.* New York: McGraw-Hill.

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

Hyland, Ken 2005. *Metadiscourse. Exploring Interaction in Writing*. London: Continuum.

Hyland, Ken. 2008. As Can Be Seen: Lexical Bundles and Disciplinary Variation. *English for specific purposes* 27/1, 41-62.

Hyland, Ken 2011. The Presentation of Self in Scholarly Life: Identity and Marginalization in Academic Homepages. *English for Specific Purposes* 30/4, 286-297.

Hyland, Ken 2017. Metadiscourse: What Is It and Where Is It Going? *Journal of Pragmatics* 113, 16-29. DOI: 10.1016/j.pragma.2017.03.007

Hyland, Ken / Tse, Polly 2004. Metadiscourse in Academic Writing: A Reappraisal. *Applied linguistics* 25/2, 156-177.

Kasapoglu, Tayfun / Kalmus, Vernika 2020. Constructing Counter-Narratives: Stories by Syrian Refugees in Turkey. *International Journal of Media and Cultural politics*, 359-366.

Katan, David / Taibi, Mustapha 2021. *Translating Cultures. An Introduction for Translators, Interpreters and Mediators*. London: Routledge.

Kilgarriff, Adam / Rychlý, Pavel / Smrž, Pavel / Tugwell, David 2004. *The Sketch Engine*. In *Proceedings of EU-RALEX*, 105-116.

Mauranen, Anna 1993. Contrastive ESP Rhetoric: Metatext in Finnish-English Economics texts. *English for Specific Purposes* 12/1, 3-22.

Masi, Silvia 2013. Metadiscourse in English and Italian: An Analysis of Popular Scientific Discourse Online. In Kermas, Susan / Christiansen, Thomas (eds) *The Popularization of Specialized Discourse and Knowledge across Communities and Cultures*. Bari: Edipuglia, 315-329.

Rizzo, Alessandra / Seago, Karen 2018. The Aesthetics of Migration: Reversal of Marginality and the Socio-Political Translation Turn, *InVerbis* 1, 7-32.

Rizzo, Alessandra / Pensabene, Maria Luisa 2021. Accessibilità e Contro Narrazione. Il Sole Luna Doc Festival. *Lingue e Linguaggi* 43, 85-118.

Schiffrin, Deborah 1980. Meta-Talk: Organizational and Evaluative Brackets in Discourse. *Sociological Inquiry* 50/3-4,199-236.

Slootjes, Jasmijn / Keuzenkamp, Saskia / Saharso, Sawitri 2018. Narratives of Meaningful Endurance: How Migrant Women Escape the Vicious Cycle between Health Problems and Unemployment. *Comparative Migration Studies* 6:21. Retrieved from <https://comparativemigrationstudies.springeropen.com/articles/10.1186/s40878-018-0088-0>

Spinzi, Cinzia / Zummo, Anouska (2022). A Comparative Study of Emotive Language in English and Italian Migrant Narratives in Digital Museums. In Maci, Stefania / Sala, Michele (eds) *Corpus Linguistics and Translation Tools for Digital Humanities. Research Methods and Applications.* London: Bloomsbury.

Suau, Jiménez F. 2010. Metadiscursive Elements in the Translation of Scientific Texts. In Gea-Valor, M. Lluisa / García-Izquierdo, Isabel / Esteve, Maria José (eds) *Linguistic and Translation Studies in Scientific Communication.* Bern: Peter Lang, 243-276.

Vande Kopple, William J. 1985. Some Exploratory Discourse on Metadiscourse. *College Composition and Communication* 36 63-94.

Zambelli, Pia 2017. Hearing Differently: Knowledge-Based Approaches to Assessment of Refugee Narrative. *International Journal of Refugee Law* 29/1, 10-41.

LARISSA D'ANGELO

Teaching effective poster design to medical students using eye-tracking technology

1. Introduction

Already in the early years of a medical student's curriculum, the importance of presenting at conferences and publishing quality research is often stressed by program directors and academic supervisors. Medical students soon learn that they will eventually enter the ever-demanding race to publish and that they need to acquire the art of presenting one's research results successfully by synthesizing and visually organizing preliminary data, most probably, through a poster presentation (Druetz/Robert 2012).

This task is often met with mixed feelings because what the genre entails is not always clear to the novice author (Hay/Thomas 1999). Conference participants and viewers often have a love/hate relationship with the poster session itself because of the several physical and time-related limitations posters entail and the amount of hard work that goes into poster writing that is seldom recognised by the academic system (Swales/Feak 2000; Swales 2004; Druetz/Robert, 2012). De Simone et al. (2001), for example, have noted that the traditional poster presentation can at times be frustrating for authors and can leave them, as well as the audience, with a sense of incompleteness. This negative evaluation of the genre leads De Simone et al. (*ibid.*) to consider the academic poster as a communication tool that is frequently inadequate for the message it carries because each poster generally attracts a limited number of viewers and sometimes not enough attention is given to the poster session by conference organizers. Another difficult aspect to manage is the competitiveness that a poster session entails: a poster presenter does not have the advantage of having a committed audience and has to compete with other presenters for space, visibility and attention (Morin 1996a, 1996b), and if poster presenters do manage to attract someone's attention, they have to accept the fact that in most cases, the interaction will be brief and superficial, leading at times, to a frustrating experience.

However, if the content is interesting and the poster is well-designed, the presentation might attract a number of interested colleagues and the interaction might carry on longer than expected, which is at the same time rewarding and challenging. The possibility to interact personally with an author, with no time limitations, means that viewers are given the chance to pose numerous questions and comments which, if particularly challenging, might put the poster presenter into difficulty. If at conferences, paper presenters have to endure five or ten minutes of question time, poster presenters are asked to remain available and interact with viewers for one or two hours at a time, sometimes even longer. Staying alert and attentive for such a long time can be tiresome and stressful. Fortunately, as mentioned before, this smaller arena is also traditionally more informal than other sessions. This colloquial, almost intimate aspect of the poster presentation is what makes the genre so unique and challenging at the same time and it is one of the reasons why it is recommended by senior academic staff members across academic fields as diverse as medicine (Masters et al. 2018), nursing (Boullata/Mancuso 2007; Briggs 2009; Campbell 2004; Halligan 2008; Price 2010), marketing (Brownlie 2007), law (Heller 1999), psychology (Beins/Beins 2011; Marek et al. 2002), psychiatry (Singh 2014) statistics (Moreno/Schollenberger 1998) and geography (Vujakovic 1995). A poster presentation represents a 'safe' yet challenging initiation to the demanding life of a researcher but it is still an academic genre that needs plenty of preparation and quite a bit of know-how.

Thanks to the Internet there is a considerable amount of material searchable online ranging from how-to tips and techniques (Alley 2003; Block 1996; Briscoe 1996; Miller 2007) to a vast kaleidoscope of downloadable templates. Block (1996), for instance, lists basic dos and don'ts that are still useful today, regarding the layout and format of posters, their content and their presentation. Briscoe's (1996) work is another landmark when it comes to preparing good scientific posters and presentations, and is particularly interesting because it focuses mainly on how to correctly handle images, tables and graphs. In Miller (2007) we find useful, hands-on annotated examples of ineffective writing and weaknesses in poster productions, followed by an explanation of how to improve the content and format of presentations. Finally, Purrington (2022) provides an example of easy and direct tips to design a good poster, together with an array of first-hand experiences, meant primarily for students, but not exclusively. All of these are valuable resources that introduce university students to the correct use of the poster genre. But what makes a poster presentation 'good'? What are the elements that can turn this academic experience into a success or failure? Preparation and knowledge of the genre, once again, seem to be the key here. Understanding early on not only the basic rules of poster presentation (i.e. the dos and don'ts that can be easily found with a quick web search) but also comprehending how this multimodal genre will be received and cognitively processed by an audience becomes pivotal.

With this in mind, the present exploratory analysis saw a group of 32 1st-year medical students enrolled in the International School of Medicine and Surgery of the University of Milan Bicocca, trained in poster writing and design using eye-tracking technology. The students were exposed to current guidelines in academic poster production within the medical field and were asked to produce a poster following a short field research of their choice. With their data at hand, they each designed a poster whose readability and salience was 'tested' using a mobile eye-tracking lab. By observing eye movements and heatmaps obtained thanks to the eye tracker, and how these involved specific visual and textual metadiscourse elements (D'Angelo 2016, 2018), each student obtained information regarding the readability and the careful positioning of salient elements and redesigned their posters accordingly. The theoretical assumptions regarding multimodality and visual metadiscourse that led to the pilot study will be hereafter discussed, followed by two examples of poster analyses, drawn from the activity carried out in class. The chapter will then provide some educational insights and a brief discussion on poster formats.

2. The academic poster: Elements of a multimodal genre

Given the fact that the academic poster comprises a textual, visual and oral component, it can be defined as a multimodal genre (D'Angelo 2011) that, compared with genres with more rigid structures such as the research article, lacks precise prescriptive guidelines but, at the same time, allows presenters not only to inform but also to be creative and persuasive. Already in the early 1990s, researchers realized that the poster genre requires numerous artistic and stylistic skills and should not be taken lightly:

> Integrating text and graphics within a limited space to convey a visual message requires detailed organization. Without professional assistance, the poster presenter must function as a writer, editor, designer, and artist. In displaying scientific information, a poster functions "to give visual access to the subtle and the difficult – that is, the revelation of the complex" (Tufte, 1983); it achieves this function through the pure form of a condensed, high-impact message integrating text and graphics (Matthews 1990: 231)

In poster presentations, visuals therefore become pivotal, because, like PowerPoints, posters display text and visuals and are organized in such a way that viewers can 'glimpse' the research work of a colleague, having, in this case, the freedom of 'reading' the poster at their own speed, of lingering on a specific aspect of the work, a table, graph or picture displayed.

What complicates this apparently simple procedure is that poster presentations usually take place in crowded, noisy places, where poster presenters should stand by their posters while conference participants walkabout, glimpsing from poster to poster, looking for one that catches their attention for a sufficient amount of time and allows them to quickly read and understand its content (MacIntosh-Murray 2007). In such an environment, where many presenters compete for attention, a well-designed poster, informative yet salient, utilizing specific visual interactive and interactional metadiscourse elements, will have a higher chance to be noticed, fully read and appreciated.

Thus, following current guidelines, what are the textual and visual features of an attractive, well-designed poster that also adheres to the norms and conventions of the discipline? First of all, a poster needs to reach a balance between visual and textual components (i.e. incorporating the right number of visuals and the right amount of text so that the poster presentation is clear and at the same time, harmonious). Avoiding crowding the poster with text and images results in better readability and consequently attracts a higher number of interested readers. In the academic poster genre, information is presented on a single large panel, a fact that semiotically distinguishes this type of genre from other academic genres, such as the research article. What in a research article can be described, explained and debated in several pages, in a poster must be condensed in few words and a very limited amount of space. Brevity and conciseness become fundamental when writing the text of posters (Matthews 1990). The most recurring advice is that the number of words in a poster should be limited (Erren/Bourne 2007; Masek 2003; Purrington 2022; Wood/Morrison 2011); also, a balance between text and images should be obtained to reach a sufficient amount of blank space which renders the poster more legible and less ‘crowded’ (Zerwic et al. 2010).

Like research articles and other academic genres, posters should also follow a clear structure and content organisation to achieve both coverage and intelligibility (Pho 2008; Samraj 2005). This is the reason why, in most posters, a title, an abstract as well as an introduction, a methodology, results and conclusions section are found (Alley 2003; Nicol/Pexman 2003), providing readers and authors with a clear ‘map’ of the content displayed. Cianflone (2011), Driskill et al. (1998), Matthews (1990) and Tardy (2005) have noted that the structure of posters displaying results of experimental studies usually follows the scientific ‘IMRD’ format (i.e. a standardized structure displaying an Introduction, a Methodology section, a Research section, and a Discussion section).

Also, MacIntosh-Murray (2007: 358), drawing on several observations by Swales and Feak (2000) suggests that poster authors should use a ‘compressed’ type of language and consider attentively the amount of white space on the poster panel. To achieve this, guidelines seem to frequently advise presenters to use bullet points instead of full sentences (MacIntosh-Murray, 2007). The poster may also be considered as a sort of ‘illustrated abstract’ (Brown 1987, cited in Matthews 1990: 227), where we find not only a short text summarizing a research project but also images. When we create a text that will be inserted in a poster, we are often advised to divide information into units (or ‘chunks’ of information), something that we do, for example, when we organize information into paragraphs. These bits of information should be carefully organized and edited so that the final textual product is coherent and of immediate effect, thanks also to the correct use of white space. In this way, we avoid long and dense columns of text that are extremely tiresome for readers to assimilate. The act of ‘chunking’ texts (Matthews 1990: 226) therefore provides readability and a clearer organization of information but does not come easily for the novice writer, because discourse must be carefully organized conceptually and each unit of information must be coherent so that discourse flows correctly. Units of texts should be linked one to another through cued headings, which also help readers locate immediately the part of the text that interests them most (Matthews 1990).

If visuals play a primary role in poster presentations, also the way textual and visual elements are displayed is important to render content easily accessible and comprehensible. The flow of information, for example, might either be aligned vertically or horizontally as well as divided into sections by columns helping the viewer read and understand the information displayed (Purrington 2022). Within each column, the text can also be divided into blocks of text, which are often numbered, inviting the reader to follow the stream of information going from top to bottom as suggested by the vertical columns and the sequential numbering (*ibid*).

3. Visual metadiscourse elements in academic posters

Aside from the general ‘best practice’ advice described above, which widely circulates among writing centres and departments across a variety of academic fields, many applied linguists have directed their attention to the elements in language that writers consciously (or unconsciously) utilize when they construct their arguments and present their statements. Hyland's (2000, 2004) theoretical approach to metadiscourse interpretation for example has long been used to research the way writers, with different amounts of experience and authority, use different communicative styles and relate with their audience. It is a well-known approach that represents a milestone in understanding how writers express their interpersonal standing and orientations towards their text and their readers. Using Hyland's (2000) theoretical approach and Thompson's (2001) terminology, textual metadiscourse can, for example, be distinguished between interactive resources (transitions, frame markers, endophoric markers, evidentials, code glosses) and interactional resources (hedges, boosters, attitude markers, engagement markers, self-mentions).

If written text can be analysed in terms of interactive and interactional forms, the same can be done for the visual components found in poster presentations (D'Angelo 2018). A new approach to reading visual images came with the publication of Kress and van Leeuwen's work (1998). Taking as their starting point the idea that visual images can be read as 'text', the metaphor of 'grammar' can be applied to the study of visuals. In this sense, 'grammar' is not a set of rules for the correct use of language but rather a set of socially constructed resources for the construction of meaning. Kress and van Leeuwen's work is revolutionary in the sense that it provides a key to reading images as if they were a text. In particular, they raise the status of the visual component in multimodal texts by considering it as "an independently organized and structured message – connected with the verbal text, but in no way dependent on it: and similarly, the other way around" (1998: 17). Consequently, they take the view that language and visual communication both realize the same fundamental and far-reaching systems of meaning that constitute our cultures, but that each does so by employing its own specific forms, and independently, although not everything that can be realized in language can also be realized utilizing images, or vice versa. This approach becomes then fundamental for those seeking a descriptive framework of analysis to be applied to multimodal texts.

Drawing from Kress and van Leeuwen's (1998; 2001) semiotic work, a number of visual elements can thus be categorized as *interactive* or *interactional* depending on their communicative function. As Table 1 shows, the interactive elements that organize information and guide the viewer in the comprehension of a multimodal text consist of the following interrelated systems: Layout, Framing Devices, Connective Elements and Graphic Elements.

Layout means the division of the poster into various 'zones' that guide the reading flow from left to right, from top to bottom, and from centre to margin. The presence or absence of *Framing Devices* (realised by elements that create dividing lines, or by actual frame lines) instead disconnects or connects elements of the image, signifying that they belong or do not belong together in some sense. Other interactive devices could be *Connective Elements* such as vectors (used in different sizes, shapes, colours or used in an attenuated or amplified way, denoting density or frequency), the repetition of shapes and colours and the alignment of elements within the poster. Information could be quickly visualized through *Graphic Elements* such as conversion processes, taxonomies, flowcharts, networks and tables. Because these elements allow writers to summarize information and help readers quickly understand the data presented, they are extremely important elements to include in poster presentations. Finally, the *Repetition of Colour and Shapes* as well as the use of *Section Titles* and the *IMRD* format can help viewers quickly understand the organization of the text in the poster. For example, by inserting short and explicative titles for each section or by using the IMRD format it is assumed that a reader will be able to easily map the organization of data on the display. Likewise, by utilizing the same colour or font type to signal specific sections in the poster the viewer should quickly navigate the information displayed.

INTERACTIVE RESOURCES	*Achieved through*
LAYOUT	Left- Right
	Top-Bottom
	Centre-Margin
	Triptych

FRAMING DEVICES	Frame lines Discontinuities of colour Discontinuity of shape Empty space between elements
CONNECTIVE ELEMENTS	Vectors Repetition of shapes Repetition of colour Alignment
GRAPHIC ELEMENTS	Conversion processes Taxonomies Flowcharts Networks Tables
REPETITION OF COLOUR AND SHAPES	Organized repetition of colours, shapes and font types in the text
SECTION TITLES	Use of short and explicative titles for each subsection
IMRD	Use of the standard IMRD format (Introduction, Methodology, Research and Discussion)

Table 1. Visual interactive elements in academic posters.

Interactional elements, listed in Table 2, are used to attract, involve and engage viewers and evolve around the concept of salience. Specific elements in posters are inserted to attract the viewer's attention to different degrees, such as the use of *Images* of real people and/or objects and *Unusual Graphic Elements* such as two- and three-dimensional graphs. The use of an *Unconventional Font Type* (e.g. Apple Chancery, Chalkduster and Bradley Hand) and bright or contrasting colour in the title of the poster, will likely raise its level of salience so that at a poster session it will be spotted among the numerous competing poster presentations.

INTERACTIONAL RESOURCES	*Achieved through*
IMAGES	Use of pictures representing people

	Use of pictures representing objects
UNUSUAL GRAPHIC ELEMENTS	Two- and three-dimensional graphs
UNCONVENTIONAL FONT TYPE	Use of a non-academic font type

Table 2. Visual interactional elements in academic posters.

4. Methodology

The pilot project involved 32 students, enrolled in the 1st year of the School of Medicine and Surgery of the University of Milan Bicocca for the academic year 2021/22. These medical students, of different nationalities, followed a 30h course on scientific and academic writing and were trained in poster design using eye-tracking technology. During the course they were exposed to current guidelines in academic poster production within the medical field and were asked to produce a poster displaying a small-scale research carried out by them, during the second semester, using an available template found online on websites such as <www.posterpresentations.com> and <www.makesigns.com>. They each designed a poster whose readability and salience was then 'tested' using a mobile eye-tracking lab. By observing eye movements and heat maps obtained through the eye tracker, and by analysing how these eye-movent maps and heatmaps involved the visual and textual metadiscourse elements described above, students obtained important information regarding readability and the careful positioning of salient elements and reorganized their posters accordingly.

For the present chapter, two posters have been selected to exemplify differences in readability and comprehension and the subsequent difficulties experienced by the viewer. For each poster, a scan path and heat map were obtained after a 30-seconds reading of the first poster draft. Heat maps, in eye-tracking research, show the relative attention paid to different areas of the display and provide a colour-coded map to interpret fixations: if the eye lingers on one area, it signals a longer fixation which appears in red; vice versa, if an area is observed for a very short time, it signals a shorter fixation, which will appear in yellow and green (yellow signalling a fixation duration between red and green) (Conklin et al. 2018). Heat maps, in this study, reveal the areas of the poster that are most significant for a reader, especially when exposed to a poster presentation. In other words, they reveal what the reader initially looks at to make sense of the poster display and the level of cognitive effort necessary. A scan path instead, provides a way to visualise the pattern of fixations and saccades during the 30 seconds of poster viewing. The size of the circle shows the duration of the fixation (bigger circles mean longer fixations, smaller circles indicate shorter fixations) whereas arrows indicate saccades and regressions, i.e. the forward and backward 'jumps' we make while reading a text (*ibid*).

4. Results from the eye-tracking study

Eye-tracking is a tool that is capable of providing valuable moment-to-moment data sources. This exploratory study reveals what happens when we look at a poster for the first time and the cognitive efforts we make to locate and organize the data provided. When we look at a poster display, our eyes stop to process the information at a location (entry point) and then move to another location where further information is available. When we fixate on a textual or visual element, our cognitive system perceives and processes the textual/visual input and at the same time, it plans where and how far to move the eyes next (Conklin et al. 2018). Our reading pattern, therefore, especially when we initially skim a text for information, displays long and short fixations, saccades and regressions. All of them are automatic, physiological responses that are not controlled consciously.

The way a poster is organized and the amount of text, visuals and graphs displayed becomes crucial during the initial skimming stage, an inevitable reading phase during poster sessions, where one roams the room looking for a poster that triggers one's interests and then copes with the volume of available information. It seems in fact, that in complex processing tasks, eye location provides an index of attention (Rayner 2009) meaning that if what the eye looks at is complex or unclear, the number and duration of fixations and saccades will vary because the amount of cognitive expenditure also varies (Castelhano/ Rayner 2008).

Complex texts have generally been found to elicit more and longer fixations and regressions. If the text is crowded, cluttered or dense, fixations get longer and saccades get shorter (Conklin et al. 2018). During a poster session, a viewer seldomly has the time to process the text from start to finish as he would with a textbook. He focuses on the most important sections of the text first, but to do so, the reader must be able to make inferences about the content of the different poster sections before they are read to know what he can skip and what he has to read carefully.

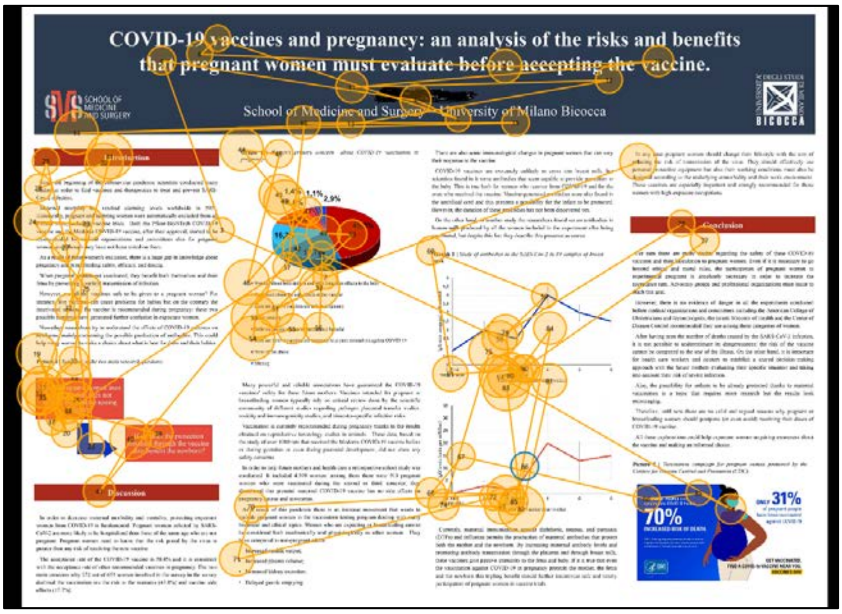


Fig. 1. Scan path of poster A.

Fig. 1 shows a poster following an IMRD format and displaying well organized and balanced content made of text, images and graphs. The scan path shows that the entry point is not the poster title but the upper right part of the display. The gaze then fixates on the title which is clearly visible because of its placement (*layout*), the *font size* and the contrasting background colour (*discontinuity of colour*). Subsequently, longer fixations and shorter saccades can be seen clustered around *graphic elements* (a pie chart and two-line charts) and the *connective elements* present (repetition of shapes and a vector). With longer saccades and regressions, the gaze then shifts towards the *section titles* (headings) that are again clearly visible thanks to a contrasting background colour, signalling the content of each section (in this case, Introduction, Discussion, Conclusion). The scan path reveals that information is not processed all at once. Viewers select specific interactive and interactional visual elements and then, after skimming and scanning the layout of the poster, they proceed to fixate on the chunked paragraphs, with a preference for *graphic elements* and bullet-point lists.

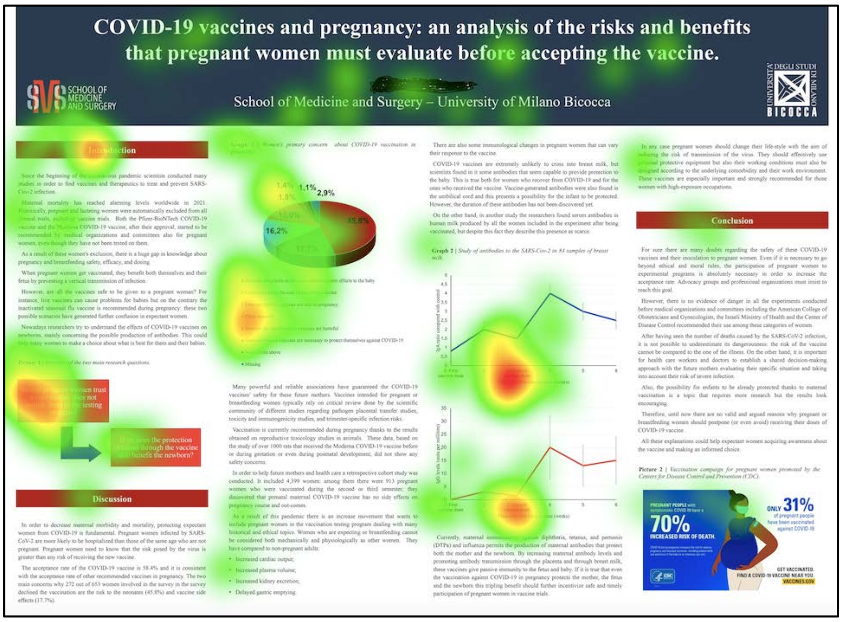


Fig. 2. Heat map of poster A.

Additional information can be gathered by considering the relative heat map, calculated considering the accumulated time spent looking at each part of the display over the course of the trial. In Fig. 2 (previous page), we see that the areas that received more attention overall were respectively *graphic elements*, *connective elements*, a bullet point list and *section titles*. These are the 'warmest' areas of the display where the reader shows a higher relative attention level.

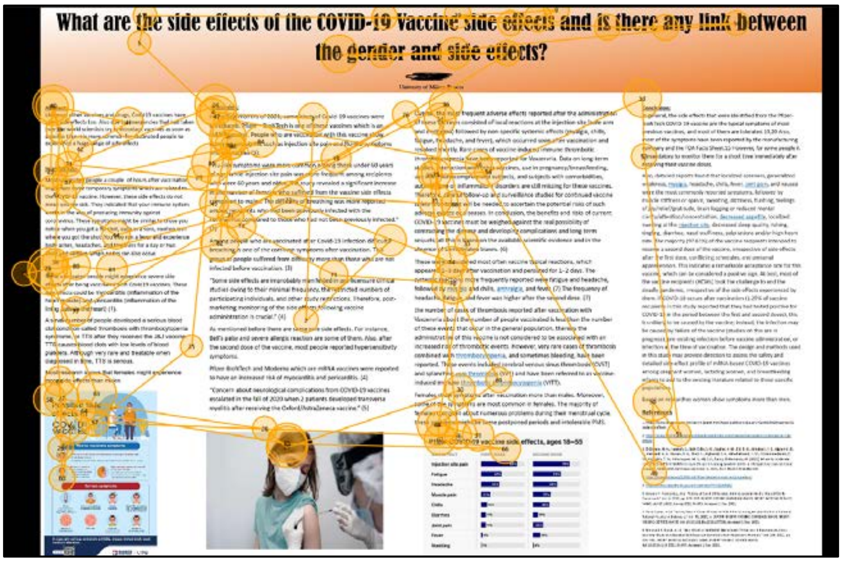


Fig. 3. Scan path of poster B.

Fig. 3 shows the first draft of a poster done by a medical student. Several problems regarding the readability of the poster emerged during the class discussion, especially after viewing the scan path and heatmap generated through the eye-tracking lab. Unlike in Fig. 1, we see that the scan path is more erratic and a higher number of brief fixations have been produced overall, all lasting approximately the same amount of time. We also see more and longer saccades and regressions occupying primarily the left side of the text columns, a scan path that is often in studies focused on the skim reading of websites (Duggan / Payne 2011; Katsanos et al. 2010). Like for websites, student viewers have been found here to scan the poster searching for a fast comprehension of the subject matter and the layout organization by focusing on the first sentences of each paragraph. Because interactive visual elements that would guide the reader are not present, and the text is laid out in columns of compact text, the viewer doesn't continue reading word-by-word and starts scanning the rest of the content for clues. Viewers, in this case, gradually move down the page, fixing their eyes mostly on the left side of the content. They do so because after reading some of the words at the beginning of each line they stop abruptly around the middle of the line and continue elsewhere.

Section titles are present but the font size is too small to notice, therefore there are no clear sections that subdivide the content of the poster. There is one *graphic element* (a line graph) and a picture containing images and text. However, the size in both cases is too small to read the information displayed and almost no fixations can be seen on these elements. An *image* representing a child is the only instance of a visual interactional metadiscourse device utilized and its usefulness in attracting the viewer's attention is proved by the fact that the eye fixated on the child's face more than once and saccades and regression paths make this an Interest Area. Eye-tracking studies have long found that people generally prefer looking at other people if they are present in the picture, with a clear preference for the eyes and mouth of the person depicted (Rayner 2007; Vo et al. 2012; Yarbus 1967). Including such interactional elements in posters does not help the viewer understand and navigate the content of the poster but it significantly raises the salience of the presentation.

The entry point in this poster viewing is, again, not the title of the poster, as is commonly believed, but the centre of the display, between columns two and three. The gaze then moves and fixates on the title but because there are numerous syntactical mistakes and unnecessary repetitions in the title of the student's poster, there are numerous saccades, fixations and regressions (see Fig. 4, next page), signalling that the title has been processed with difficulty by the reader.

Finally, it is interesting to consider the heat map of poster B (Fig. 5, next page) as it confirms that the few salient areas of the poster are the *images* present, the line graph (*graphic element*) and the first three section titles. However, because the image on the left and the line graph are too small to decipher, the 'warm' areas are limited, unlike in poster A (see Fig. 2, above). More attention was given instead to the small *section titles* inserted and the first few lines of each paragraph. Here we see more clearly how the reader tends to concentrate on the left part of the text columns, skimming through the overwhelming block of information provided.

Fig. 4. Scan path of the incorrect title in poster B.

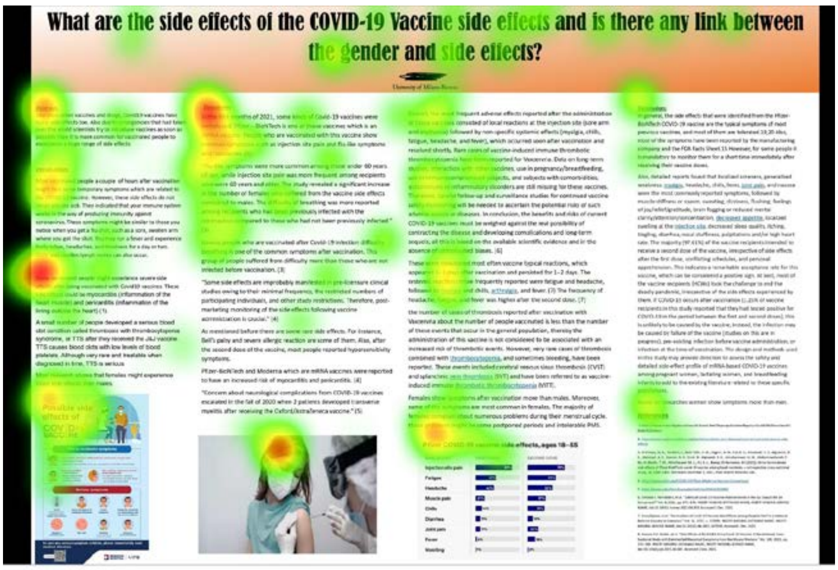


Fig 5. Heat map of poster B.

5. Conclusions

The present analysis has explored an alternative way to comprehend and evaluate academic poster writing within a class environment. What is commonly provided to university students that need to learn how to design and write an academic poster is usually a long list of do's and don't's, a few examples to follow and perhaps a university template to utilize, uniformizing every poster presentation. An alternative way to explore how the genre works cognitively is to utilize an eye-tracking lab to reveal to students what the consequences are for puzzled viewers because of a poorly designed poster.

Poster A provided an example of a poster that follows most of the instructions provided during the writing course and the scan path and heat map derived from the eye-tracking trial confirmed the effectiveness of the visual interactive and interactional elements utilized by the student. This exploratory study, although limited, confirms that academic posters are complex texts and consequently they tend to elicit more and longer fixations and regressions. These fixations cluster around visual interactive and interactional elements that respectively help guide the reader through the initial skimming phase, and provide salient material that makes the poster stand out in a poster session, where presenters inevitably compete for attention.

Poster B provided an example of poor design and bad choices made by the student writer, who did not fully comprehend how to utilize correctly visual metadiscourse elements and most of all, did not reach a balance between the amount of text inserted and the use of images and graphic elements. The scan path and heat map confirmed an overwhelmed reading experience, where the viewer tries unsuccessfully to map the organization of information. The high amount of average-length fixations and long and short saccades and regressions, especially where the novice writer inserted syntactically incorrect textual elements, has shown the student the cognitive load experienced by the viewer when trying to decipher the meaning of the text. In a poster session, such errors would lead viewers to stop reading the poster because, in such a context, where time is short and competition is high, one looks for interesting, yet easily readable academic material.

Finally, this exploratory study hints at the fact that utilizing ready-available poster templates is not sufficient. The visual and textual mechanisms of poster presentations need to be fully understood by novice (and expert) academic writers to balance every element they choose to display, always keeping in mind the effect it has on viewers and the readability of the poster as a whole. Hopefully, more studies, with a wider corpus, will focus on this pedagogical aspect in the future, with the help of eye-tracking tools.

References

Alley, Michael 2003. *The Craft of Scientific Presentations*. New York: Springer.

Beins, Bernard / Beins, Agatha M. 2011. *Effective Writing in Psychology. Papers, Posters, and Presentations*. Malden, MA: John Wiley & Sons.

Block, Steven M. 1996. Do's and Don'ts of Poster Presentations, *Biophysical Journal* 71, 3527-3529.

Boullata Joseph I. / Mancuso Carissa E. 2007. A "How-To" Guide in Preparing Abstracts and Poster Presentations, *Nutrition in Clinical Practice* 22/6, 641-646.

Briggs, David J. 2009. A Practical Guide to Designing a Poster for Presentation, *Nursing Standard* 23/34, 35-39.

Briscoe, Mary Helen 1996. *Preparing Scientific Illustrations*. New York: Springer.

Campbell Robert S. 2004. How to Present, Summarize, and Defend Your Poster at a Meeting, *Respiratory Care* 49/10, 1217-1221.

Castelhano, Monica S. / Rayner, Keith 2008. Eye Movements during Reading, Visual Search and Scene Perception: An Overview. In Rayner, Keith / Shen, Deli / Bai, Xuejun / Yan, Guoli (eds) *Cognitive and Cultural Influences on Eye Movements*. Tinjin: Tinjin People's Publishing House, 3-33.

Cianflone, Eugenio 2011. A Preliminary Description of Abstracts and Poster Presentations in Food Sciences. *English for Specific Purposes World* 10/32.

Conklin, Kathryn / Pellicer-Sánchez, Ana / Carrol, Gareth 2018. *Eye-Tracking: A Guide for Applied Linguistics Research*. Cambridge: Cambridge University Press.

D'Angelo, Larissa 2011. Academic Poster Presentation: A Marginalized Genre?. In Di Martino, Gabriella / Polese, Vanda / Solly, Martin (eds) *Genres on the Move: Hybridization and Discourse Change in Specialized Communication*. Napoli: Edizioni Scientifiche Italiane, 191-204.

D'Angelo, Larissa 2016. *Academic Posters. A Textual and Visual Metadiscourse Analysis.* Bern: Peter Lang.

D'Angelo, Larissa 2018. Disciplinary Cultures in Academic Posters: A Textual and Visual Metadiscourse Analysis. *Lingue e Linguaggi* 28, 69-83.

De Simone, Raffaele / Rodrian, Jörg / Osswald, Brigitte / Sack, Falk-Udo / De Simone, Eliana / Hagl, Siegfried 2001. Initial Experience with a New Communication Tool: The 'Digital Interactive Poster Presentation', *European Journal of Cardio-thoracic Surgery* 19/6, 953-955.

Driskill, Linda / Lewis, Karen / Stearns, Jennie / Volz, Tracy 1998. Students' Reasoning and Rhetorical Knowledge in First-Year Chemistry, *Language and Learning Across the Disciplines* 2/3, 3-24.

Druetz, Thomas / Robert, Emilie 2012. Why Do Poster Presentations Not Receive More Consideration? Some Thoughts Shared by Two PhD Candidates. *Canadian Journal of Public Health* 103/6, e474.

Duggan, Geoffrey B. / Payne, Steven J. 2011. Skim Reading by Satisficing: Evidence from Eye Tracking. *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems* Vancouver, 11-12 May 2011, 1141-1150.

Erren, Thomas C. / Bourne, Philip E. 2007. Ten Simple Rules for a Good Poster Presentation. *PLoS Computational Biology* 3/5, e102.

Halligan, Phil 2008. Poster Presentations: Valuing All Forms of Evidence. *Nurse Education in Practice* 8/1, 41-45.

Hay, Iain / Thomas, Susan 1999. Making Sense with Posters in Biological Science Eeducation. *Journal of Biological Education* 33/4, 209-214.

Heller, Michael A. 1999. Cutting Edge of Poster Law. *Journal of Legal Education* 49/4, 467-479.

Hyland, Ken 2000. *Disciplinary Discourses. Social Interactions in Academic Writing*. London: Longman.

Hyland, Ken (2004). *Disciplinary Discourses. Social Interactions in Academic Writing*. Ann Arbor, MI: University of Michigan Press.

Katsanos, Christos / Tselios, Nikolaos / Avouris, Nikolaos 2010. Evaluating Website Navigability: Validation of a Tool-Based Approach through Two Eye-Tracking User Studies. *New Review of Hypermedia and Multimedia* 16/1-2, 195-214.

Kress, Günther / van Leeuwen, Theo 1996. *Reading Images. The Grammar of Visual Design*. London: Routledge.

MacIntosh-Murray, Anu 2007. Poster Presentations as a Genre in Knowledge Communication: A Case Study of Forms, Norms, and Values. *Science Communication* 28/3, 347-376.

Marek, Pam / Christopher, Andrew N. / Koenig, Cynthia S. 2002. Applying Technology to Facilitate Poster Presentations. *Teaching of Psychology* 29/1, 70-72.

Masek, Linda E. 2003. A Picture Really Is Worth a Thousand Words or ow to market the medical library using bulletin boards and posters. *Journal of Hospital Librarianship*, 3(1), 89-92.

Masters, Ken / Treasure-Jones, Tamsin / Elferink, Raymond 2018. Teaching Medical and Health Sciences Students to Develop e-Posters with Learning Toolbox. *MedEdPublish*, 7/2. DOI: 10.15694/mep.2018.0000072.1

Matthews, Diane L. 1990. The Scientific Poster: Guidelines for Effective Visual Communication, *Technical Communication* 37/3, 225-232.

Miller, Jane E. 2007. Preparing and Presenting Effective Research Posters. *Health services research* 42, 311-328.

Moreno, Jerry / Schollenberger, John 1998. The American Statistics Poster Competition. *Teaching Statistics* 20/2, 34-37.

Morin, Karen H. 1996a. Poster Presentations: Planning. *MCN: American Journal of Maternal/Child Nursing*, 21/4, 206-208.

Morin, Karen H. 1996b. Poster Presentations: Getting Your Point Across. *MCN: American Journal of Maternal/Child Nursing*, 21/6, 307-310.

Nicol, Adelheid A. / Pexman, Penny M. 2003. *Displaying Your Findings. A Practical Guide for Creating Figures, Posters, and Presentations*. Washington: American Psychological Association.

Pho, Pfuong Dzung 2008. Research Article Abstracts in Applied Linguistics and Educational Technology: A Study of Linguistic Realizations of Rhetorical Structure and Authorial Stance. *Discourse Studies* 10/2, 231-250.

Price, Bob (2010). Disseminating Best Practice at Conferences. Nursing Standard 24/25, 35-41.

Purrington, C. (2014). Designing Conference Posters. Retrieved from <https://colinpurrington.com/tips/poster-design/>.

Rayner, Keith 2009. Eye Movements and Attention in Reading, Scene Perception, and Visual Search. *Quarterly Journal of Experimental Psychology* 62/8, 1457-1506.

Rayner, Keith / Li, Xingshan / Williams, Carrick C. / Cave, Kyle R. / Well, Arnold D. 2007. Eye Movements during Information Processing Tasks: Individual Differences and Cultural Effects. *Vision Research* 47/21, 2714-2726.

Samraj, Betty 2005. An Exploration of a Genre Set: Research Article Abstracts and Introductions in Two Disciplines. *English for specific purposes* 24/2, 141-156.

Singh, Manpreet K. 2014. Preparing and Presenting Effective Abstracts and Posters in Psychiatry. *Academic Psychiatry* 38/6, 1-7.

Swales, John M. 2004. *Research Genres. Exploration and Applications*. Cambridge: Cambridge University Press.

Swales, John M. / Feak, Christine B. 2000. *English in Today's Research World. A Writer's Guide*. Ann Arbor, MI: Michigan University Press.

Tardy, Christine M. 2005. "It's Like a Story": Rhetorical Knowledge Development in Advanced Academic Literacy. *Journal of English for Academic Purposes* 4/4, 325-338.

Thompson, Geoff 2001. Interaction in Academic Writing: Learning to Argue with the Reader, *Applied Linguistics* 22/1, 58-78.

Vo, Melissa L.-H. / Smith, Tim J. / Mital, Parag K. / Henderson, John M. 2012. Do the Eyes Really Have It? Dynamic Allocation of Attention When Viewing Moving Faces. *Journal of Vision* 12/3, 1-14.

Vujakovic, Peter 1995. Making Posters. *Journal of Geography in Higher Education* 19/2, 251-256.

Wood, Gordon J. / Morrison, R. Sean 2011. Writing Abstracts and Developing Posters for National Meetings. *Journal of Palliative Medicine* 14/3, 353-359.

Yarbus, Alfred L. 1967. *Eye Movements and Vision*. New York: Springer.

Zerwic, Julie J. / Grandfield, Kevin / Kavanaugh, Karen / Berger, Barb / Graham, L. / Mershon, M. 2010. Tips for Better Visual Elements in Posters and Podium Presentations, *Education for Health* 23/2, 267.

Notes on contributors

LARISSA D'ANGELO is Associate Professor of English Language at the Department of Foreign Languages, Literatures and Cultures and at the Department of Human and Social Sciences of the University of Bergamo. She specialized in English Language in the USA (Youngstown State University), obtaining an MA, a TESOL Certificate and a Certificate in Children's and Young Adult Literature and she later obtained a PhD in Applied Linguistics at the University of Reading (UK). Her main research interests deal with the translation of Children's and Young Adult Literature, Audio Visual Translation and multimodal analyses.

WILLIAM BROMWICH is Associate Professor of English Linguistics and Translation Studies at the Marco Biagi Department of Economics at the University of Modena and Reggio Emilia. He is a regular speaker at the CERLIS conferences in Bergamo, and the CRILL conferences in Caserta and Naples on law and language, and his recent work examines the resemanticisation of the enterprise in digital communication, with a particular focus on the platform economy.

STEFANIA CONSONNI is a researcher in English linguistics at the University of Bergamo, Department of Foreign Languages, Literatures and Cultures. She has published books and essays on textual paradigms; narratology; the history and theory of the novel; the semiotics of visual vs. verbal language; re- and co-semiotization; the history and theory of spatialization; specialized communication in a discourse-analytical and culturalist perspective; the semiotic, pragmatic and epistemological features of traditional and new genres within academic, scientific, entertainment and media discourse.

MICHELA GIORDANO holds a degree in Foreign Languages and Literatures from the University of Cagliari and an MA in Linguistics from California State University, Long Beach, USA. She is currently an Associate Professor and works in the Department of Humanities, Languages and Heritage at the University of Cagliari. She teaches English Translation in the Translation of Specific Texts course in the Faculty of Humanities. She also teaches English Language (with a module in The Language of Politics) in the International Relations course at the Faculty of Economic, Legal, and Political Sciences. Her research and publications focus on the language of politics, legal and institutional English, ESP, and gender, along with translation, genre analysis, discourse analysis, corpus linguistics and CLIL methodology.

ELENA MANCA is Associate Professor of English Linguistics, Language and Translation at the University of Salento (Lecce) and teaches ‘English Language and

Linguistics' and 'Translation into/from English and Italian' at the BA in Linguistic Mediation of the University of Salento. Her areas of research are Corpus Linguistics, specialized languages, cross-cultural studies, translation studies and language teaching. In particular, she has extensively investigated the linguistic, visual and cultural features of tourism discourse by cross-comparing several multimodal tourist texts in English and in Italian produced by a variety of cultures. She has proposed a four-step methodology for the identification of translation equivalents across cultures and she has elaborated the Cultural Communication Grammar framework for the classification of cultural features through the analysis of language and visuals. She has also developed language-teaching materials for familiarizing students with Corpus Linguistics and with the notion of extended units of meaning and functionally complete units of meaning which are at the basis of the interplay between language and meaning. She is currently working on figurative language in English and Italian tourism texts.

MARIA ANTONIETTA MARONGIU has a degree in Foreign Languages from the University of Bologna and a Ph.D. in Applied Linguistics from the University of Illinois at Urbana-Champaign, IL, USA. She has taught EFL and ESP for several years as contract lecturer at the Faculty of Economic, Law and Political Sciences of the University of Cagliari. She is a qualified teacher trainer and has worked as pre-service and in-service FL/L2 teacher trainer for two decades. Besides, she teaches English and is involved in teacher education courses at the Language Centre of the

University of Cagliari. Her research interests and main publications are in the fields of sociolinguistics, discourse analysis and gender analysis, as well as in applied linguistics and teaching methodology.

MICHELE SALA, PhD (University of Bergamo), MA (Youngstown State University, Ohio), is an Associate Professor in English Language and Translation at the University of Bergamo (Department of Foreign Languages, Literatures and Cultures), where he teaches English linguistics and translation at graduate and undergraduate level. He is a member of AIA (Associazione Italiana di Anglistica), CERLIS (Centro di Ricerca sui Linguaggi Specialistici), CLAVIER (Corpus and Language Variation in English Research Group) and a member of the scientific and editorial board of the CERLIS Series (international peer-reviewed volumes on specialized languages). His research activity deals with language for specific purposes and, more specifically, the application of genre and discourse analytical methods to a corpus-based study of specialized texts in the domain of academic research, law, medicine and applied linguistics, as well as with digital humanities.

CARMEN SANCHO GUINDA has been teaching Professional and Academic Communication in the Department of Linguistics Applied to Science and Technology at the Universidad Politécnica de Madrid for more than 30 years. Her major research interests comprise the interdisciplinary analysis of academic, professional and political discourses and genres, the discourse of science dissemination and outreach, and the teaching/learning of academic literacies, especially within the area of English-medium instruction in higher education. Currently she is the editor-in-chief of Ibérica, and editorial board member of the Journal of English for Academic Purposes.

CINZIA SPINZI is Associate Professor at the University of Bergamo. She holds a PhD in English for Specific Purposes, an MA in Translation Studies from the University of Birmingham, and a Research Fellowship from the City University of London. She is co-editor of *Cultus: the Journal of Intercultural Mediation and Communication*. Her research interests include language/cultural mediation and translation, Corpus Linguistics and Functional Grammar applied to the study of ideology and metaphors in specialised communication, with a particular focus on political and tourism discourses.

GIROLAMO TESSUTO is Full Professor of English Linguistics and Translation at the Department of Precision Medicine of University of Campania 'Luigi Vanvitelli' where he is also Director of the Centre for Interdisciplinary Research in Language and Medicine. He also teaches in the Law Departments of the University 'Luigi Vanvitelli' and the University of Naples 'Federico II'. Besides his membership of the Clavier Research Centre (Milan), he is an editorial board member of various international English linguistics journals, and chief editor of the *Legal Discourse and Communication* peer-review international series. His research interests focus primarily on (critical) discourse analysis of academic, professional and institutional genres in legal, medical and healthcare contexts. His published academic work comprises several different monographs for teaching and research purposes as well as publications appearing as articles, book chapters, co-edited volumes, book reviews, and endorsements.