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Research Article

'What I'm Speaking is almost English…': A Corpus-based Study of Metadiscourse in English-medium Lectures at an Italian University

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Abstract

This paper deals with the use of metadiscourse by Italian university lecturers who teach through the medium of English (EMI, English-Medium Instruction). The objective is to verify whether, irrespective of possible shortcomings in their mastery of the language, lecturers demonstrate sensitivity to the situational demands of the EMI classroom, paying attention to the needs of the audience. A small, specialised corpus of undergraduate university lectures in the fields of Physical Sciences and Technology will be analysed. In particular, the focus will be on references to the discourse, the code, the lecturer as speaker and the students as listeners. I will investigate what discourse functions metadiscourse markers perform, what form-function associations can be identified, and whether signs of dysfluency and non-standard forms can be found in relation to metadiscourse. The pedagogical implications of the findings will be considered and suggestions provided on how to incorporate metadiscourse in teacher training programmes. The paper will conclude with some methodological reflections on how to investigate metadiscourse in university lectures.

Keywords

English-medium instruction • Metadiscourse • Impersonal metatext • Personal metatext • Audience interaction • Non-standard metadiscourse • Undergraduate lectures

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Universities across Europe are increasingly adopting the educational policy of English-Medium Instruction (EMI). EMI courses are often implemented to respond to socio-economic demands and limited attention has been paid so far by institutions to the implications of teaching and learning through a non-native language (Costa & Coleman, 2013; Dafouz, Núñez, & Sancho, 2007; Hultgren, Jensen, & Dimova, 2015). Research on EMI in Italy reflects European tendencies, with most studies conducted on the spread of English-taught programmes (Broggini & Costa, 2017; Campagna & Pulcini, 2014; Costa & Coleman, 2013), language policies (Molino & Campagna, 2014), and the attitudes and perceptions of the main stakeholders (Bendazzoli, 2015; Costa & Mariotti, 2017; Pulcini & Campagna, 2015). Investigations documenting actual practices are fewer and at first they focused on training or pedagogic strategies (Costa, 2015; Guarda & Helm, 2016); more recently, studies of language use have also emerged (Broggini & Murphy, 2017; Molino, 2017), although they remain sporadic.

This paper aims to contribute to the description of how language is employed in EMI lectures. To this purpose, it offers an analysis of metadiscourse in six Physical Sciences and Engineering undergraduate lectures held in English by Italian native speaker instructors at a large university in Northern Italy. The study aims to verify whether, irrespective of possible shortcomings in their mastery of the language, lecturers demonstrate sensitivity to the situational demands of the EMI classroom, paying attention to the needs of the audience.

Metadiscourse is investigated following Ädel's (2006; 2010; 2012) reflexive model and using corpus-based methods to identify, classify and quantify relevant markers. The focus is on references to the discourse, the code, the lecturer as speaker and the students as listeners, thus considering both metatextual uses and instances of interaction with the audience. The following research questions will be addressed: (i) What discourse functions do metadiscourse markers perform in EMI lectures?; (ii) What are the preferred association patterns between discourse function and type of metadiscourse (i.e. personal or impersonal) and between function and language form?; (iii) Do performance phenomena of dysfluency and non-native use of English affect the comprehensibility of metadiscourse units?

The primary objective of this study is to gain initial insights into the characterising features of EMI lectures in the context examined in terms of metadiscourse. Nevertheless, the discussion also considers the implications of the findings for teacher training, the effectiveness of corpus-based techniques for the study of metadiscourse and the ability of Ädel's (2006; 2010) taxonomy of functions to identify the uses found in the lectures under scrutiny.

Metadiscourse in University Lectures: Analytical Foci and Approaches

Studies on lingua franca academic English (e.g. Mauranen, 2012) have underscored the importance of metadiscourse as a way to attain discourse explicitness, i.e. to help 'speakers achieve organization within their utterances as well as [...] clarity' (Björkman, 2011, p. 952). It is not surprising, therefore, that metadiscourse is a frequent topic in investigations dealing with the comprehension needs of university students during lectures. Indeed, as lectures are 'detailed and extended monologues' (Lynch, 2011, p. 81) that impose 'heavy cognitive demands' (Field, 2011, p. 108) on the listeners, they are challenging to process, especially for L2 (second language) students.

The aspects of metadiscourse in lectures that have received most attention are discourse structuring devices (Morell, 2004; Thompson, 2003) and relevance markers (Deroey & Taverniers, 2012; Zare & Keivanloo-Shahrestanaki, 2017), with the latter used to simultaneously evaluate and organise discourse. Experimental studies conducted on students to test the efficacy of metadiscourse for lecture comprehension conclude that metadiscourse enhances understanding (Kuhi, Asadollahfamb, & Dabagh Anbarianc, 2014) but more so in students whose level of English is low (Aguilar Pérez & Arnó Macià, 2002, p. 19).

Descriptive studies have taken a variety of approaches: some have opted for a 'narrow' view of metadiscourse focusing on discourse reflexivity (Zare & Tavakoli, 2016), while others have taken a broader view (e.g. Barbieri, 2013) concentrating on 'devices writers use to explicitly organize their texts, engage readers, and signal their attitudes to both their material and their audience' (Hyland, 2010, p. 127). In addition, some investigations have analysed the use of metadiscourse together with other features of language (Deroey & Taverniers, 2012). For these reasons, comparisons across results are not always straightforward.

Among the studies that have adopted a reflexive model of metadiscourse is that of Zare and Tavakoli (2016). Employing Ädel's (2010) taxonomy of functions for personal metadiscourse and concentrating on non-native speakers of English, the authors investigate monologic lectures and dialogic academic discussions, thus allowing for genre-specific features to become evident. Compared to academic discussions, lectures are characterised by a greater focus on terminology and more attention is paid to discourse organisation, with numerous markers of phorics, i.e. items that point to various locations in the unfolding discourse. Zare and Tavakoli also found that text-oriented metadiscourse, or metatext, is more prevalent in lectures than audience involvement, which is more frequent in dialogues.

Methodology

Materials

The sample used for analysis is composed of six university lectures held in English by Italian native speakers.[2] Table 1 illustrates the corpus, providing information about the disciplinary fields included, the number of words per class and the class length in minutes. The small size of the sample will make it possible to analyse all potential manifestations of metadiscourse and to assess the efficacy of both the methodology (i.e. corpus-based analysis) and the analytical framework.

Table 1
Lectures for Analysis

Lectures[3]	*Discipline*	*No. of words*	*Minutes*
LELUNDAI	Ambient Intelligence	11,567	79
LELUNDCH	Chemistry	9,307	77
LELUNDMA	Mathematical Analysis	6,206	67
LELUNDPH	Physics	6,537	70
LELUNDEC	Electronic Circuits	5,911	59
LELUNDCS	Computer Science	5,868	66
Total		45,396	418

Lectures were selected as a genre for analysis for their typicality, as at the time of data collection (i.e. the academic year 2013-2014), most Italian universities offering EMI courses were delivered through formal lectures rather than seminars or other forms of closer student-tutor interaction (Costa & Coleman, 2013).[4] As for the choice of Physical Sciences and Engineering, these disciplines were among the fields in which most EMI programmes were offered in Italy (Costa & Coleman, 2013). The audience is composed of a minimum of 40 students and chiefly includes native speakers of Italian, another feature typical of the Italian academic context (Campagna & Pulcini, 2014). Nevertheless, international students may be present and, when the data were collected, these constituted 12% of the total student population, excluding Erasmus-exchange students. The lecturers are all Italian native speakers, again reflecting the L1 (first language) of most EMI instructors in Italy in 2013-2014 (Costa & Coleman, 2013).

Analytical Framework for the Analysis of Metadiscourse

This study is based on the reflective model of metadiscourse proposed by Ädel in her studies of written learner language (2006) and elaborated in subsequent analyses of

2 An informed consent was signed by all lecturers stating that their anonymity and that of their institution would be safeguarded.

3 The codes attributed to the lectures are modelled on those used in MI*CASE (Michigan Corpus of Academic Spoken Englis*h, retrieved August, 2017, from https://quod.lib.umich.edu/cgi/c/corpus/corpus?page=home;c=micase;cc=micase/). They indicate the size of the class, degree level and discipline: for instance, in LELUNDAI, LEL stands for Large Lecture (i.e. at least 40 students), UND for Undergraduate and AI for Ambient Intelligence.

4 Although the situation today is largely unchanged, for a more recent picture on EMI in Italy (academic year 2014-2015), see Broggini and Costa (2017).

spoken vs. written academic discourse (2010) and audience orientation in monologic academic genres (2012). Ädel's model, grounded in Jakobson's metalinguistic, expressive and directive functions of language, focuses on the ability of language to talk about itself and to refer to addresser and addressees in their roles as speaker/writer and listener/reader.

Ädel distinguishes two categories of metadiscourse: 'metatext' (2006; 2010; 2012) and 'audience interaction' (2010, 2012), called 'writer-reader interaction' in her study of learner writing (2006). Metatext markers explicitly signal the speakers' discourse acts, refer to aspects of the spoken/written text itself, such as its organisation or wording, and mention characteristics of its production. Metatext can be expressed through personal (e.g. *I, you*) and impersonal (e.g. *now*, *question, term*) markers. On the other hand, audience interaction has to do with addresser-addressee relations. This paper deals with both categories of metadiscourse.

Table 2
Personal and Impersonal Metadiscourse (Ädel, 2006, p. 27)

	Personal metadiscourse			*Impersonal metadiscourse*
	Participant-oriented	*Writer-oriented*	*Reader-oriented*	
Explicitness	+	+	+	+
World of discourse	+	+	+	+
Current discourse	+	+	+	+
Writer *qua* writer	+	+	−	−
Reader *qua* reader	+	−	+	−

In order for items to be recognised as markers of metadiscourse, they should possess specific qualities, as illustrated in Table 2. Language expressions should explicitly comment on discourse and/or its participants; they should relate to the world of discourse rather than the real world; and they should refer to the ongoing discourse and not to other texts. With regard to personal metadiscourse, in particular, linguistic expressions should refer to the speaker-*qua*-speaker and audience-*qua*-audience.

Identifying and Quantifying Instances

Instances of metadiscourse were identified by applying the criteria in Table 2 (i.e. explicitness, world of discourse, current discourse, writer *qua* writer, reader *qua* reader) as carefully as possible. The adoption of a corpus-based approach required starting from a list of potential metadiscourse items to be retrieved. As regards personal metadiscourse, all possible uses of the first person pronouns *I*, *we* and *you* in subject position and their oblique forms (e.g. *my, our, your*) were retrieved and analysed. The items *one* and *speaker* were also included (Table 3). As regards impersonal markers, it was necessary to compile an inventory of items eligible for retrieval. The following steps were taken. A list of items was collected drawing from existing literature (Ädel,

2006; Hyland, 2005; Lorés, 2006; Swales, 2001). Then the lemmatised wordlist of the corpus was examined to check which markers of the initial list were actually present and whether other items could be used metadiscursively. Finally, in order to verify that the analysis of the wordlist was satisfactory, the transcriptions were read multiple times, a step that was feasible given the small size of the corpus. The aim of this step was to ensure that certain non-standard expressions were not omitted due to the L2 nature of the data. No additional items were found through such verification, suggesting that, for impersonal metadiscourse, the analysis of the lemmatised wordlist could be a way to ensure a high 'recall rate' (Ädel, 2006, p. 188).

Table 3
Potential Markers of Personal and Impersonal Metadiscourse

Personal metadiscourse	*I, we, you (subj.); me, my, mine, us/'s, our, ours, you (obj.), your, yours; one; speaker*
Impersonal metadiscourse	*again; answer*; ask*; back to; begin*; break; call*; class*; conclu*; course; defin*; descri*; discuss*; end*; English; example*; final; finish*; first*; follow*; goal*; here; hour*; instance*; introduc*; Italian; jok*; language*; last*; later; lecture; lesson; mean*; mention*; name*; next; now; plan*; point*; present*; previous*; question*; repeat*; say*/said; second*; sense*; sentence*; session*; so far; speak*; start*; stat*; suggest*; sum*; talk*; tell*; term*; thing*; third*; three; time; two; word**

All the items in Table 3 were retrieved using the concord tool of the Sketch Engine (Kilgarriff, Rychly, Smrz, & Tugwell, 2004) and the concordance lines thus obtained were analysed to exclude non-metadiscursive uses. The remaining instances were classified in terms of their function by reading the concordance lines carefully, expanding the context when necessary. Finally, the instances were counted according to the specific discourse function they performed.

Results

Metatext: Personal Forms

Table 4 shows the uses of personal metadiscourse found in the corpus for the category of personal metatext. The taxonomy is based on Ädel's (2010) study of personal metadiscourse. Three metatextual classes can be distinguished: metalinguistic comments, discourse organisation and speech act labels. Only the forms observed in the data are displayed in Table 4. The figures in this table and the subsequent ones are raw.

Table 4
Personal Metatext

Metatext categories		*Discourse function*	*Occurrences per form*					*Total*
			I	*we*	*you*	*me*	*us*	
Metalinguistic comments		Repairing	2	0	0	10	0	12
		Reformulating	28	0	0	6	0	34
		Commenting on linguistic form	1	2	0	3	5	11
		Clarifying	2	1	0	0	1	4
		Managing terminology	12	11	0	1	2	26
		Total	45	14	0	20	8	87
Discourse organisation	Managing topic	Introducing topic	7	0	0	3	6	16
		Delimiting topic	4	7	0	0	0	11
		Adding to topic	0	0	0	1	0	1
		Concluding topic	0	3	0	0	0	3
		Marking asides	1	0	0	0	0	1
	Managing phorics	Enumerating	0	0	0	0	0	0
		Endophoric marking	0	18	13	0	0	31
		Previewing	14	60	0	0	0	74
		Reviewing	33	47	0	0	0	80
		Contextualising	34	22	3	3	0	62
		Total	93	157	16	8	6	280
Speech act labels		Arguing	0	0	0	0	0	0
		Exemplifying	2	1	0	1	0	4
		Saying	15	3	0	0	0	18
		Other speech act labels	8	0	0	0	0	8
		Total	25	4	0	1	0	36
		Total	163	175	16	28	14	396

The most frequent category of personal metatext in the sample (71% of all instances) is discourse organisation. Through this category, speakers manage the topics they are talking about, signalling their beginning and end, adding information, delimiting their 'boundaries' and, if need be, making asides. Discourse organisation is also performed by markers that have to do with phorics. Such units are used for a variety of purposes: to clarify the order of different parts of the current discourse (i.e. 'enumerating'); to direct the audience to specific points in discourse (i.e. 'endophoric marking'); to point forward or backward (i.e. 'previewing' and 'reviewing'); and to allow speakers to comment on the specific situation of discourse production (i.e. 'contextualising').

The results in Table 4 indicate that greater attention is paid to signposting discourse phorics than to managing topics. This finding may be related to the fact that in all the lectures examined, the instructors either use slides or rely on an electronic whiteboard to support their teaching. Hence, the transition from one topic to another may be marked mainly through visual aids. An example of the function of 'introducing topics' is given in (1), while examples (2) and (3) show common visually-aided strategies employed to announce a new (sub)topic.

(1) S1:<so we have four combinations **let's start** from an input with which is ehh a voltage and an output which is a voltage too> [LELUNDEC]

(2) S1:<sustainability is really inspiring more and more people to work in this area but not only because it's nice but because there is a huge need of manpower in those eh areas <CHANGE_OF_SLIDE> **and now the concept of green chemistry** you - have you heard about the green chemistry concept> [LELUNDCH]

(3) S1:<**what happens in the case of h2 second source okay?** i build also for the second source another machine reversible machine> [LELUNDPH]

While in example (2), the transition to the topic of green chemistry is introduced by a change of slide and the impersonal marker *now*, in example (3), the discussion on the second source h2 is announced just after the lecturer has finished writing on the electronic whiteboard. Here the transition mainly relies on 'numerical visuals' (Rowley-Jolivet, 2002, p. 27), specifically the mathematical formula written while speaking. The formula works in connection with the use of prosody whose function is to mark the utterance as a question, thus appealing to the students' attention. Whether these ways of signalling new topics are effective for lecture comprehension in an EMI setting is an issue that cannot be ascertained in this study. Nevertheless, based on Kuhi, Asadollahfamb, and Dabagh Anbarianc's (2014) study showing the positive influence of metadiscourse on lecture comprehension, the hypothesis may be formulated that more explicit ways of signalling transition could improve understanding. The metadiscourse area of topic management, therefore, is one that deserves greater attention in the description of discourse practices in EMI lectures.

The most common functions of personal pronouns for both discourse organisation and in absolute terms are reviewing and previewing. It is interesting to notice that these functions are mainly carried out by means of the participant-oriented metadiscourse marker *we*, suggesting an emphasis on cooperation, whereby the lecturer guides the audience by engaging and 'bonding' with them (example 4). This behaviour is symptomatic of the lecturers' willingness to help students remember important points and develop expectations of the macro phases of the lecture.

(4) S1:<today […] **we discuss** the concept of entropy> [LELUNDPH]

The second most frequent category of personal metatext is that of metalinguistic comments. When lecturers employ these, they may perform different functions: repairing what they have said to amend mistakes in form or meaning; reformulating their utterances with alternative words or expressions, or commenting on them in terms of, for instance, word selection; clarifying the sense of the message to prevent misunderstandings; or stating the meaning of terms or assigning a specific label to a given phenomenon. The most recurrent functions of metalinguistic comments are 'reformulating' and 'managing terminology'. The relatively high number of reformulations is due to the use of *I mean*

(example 5). This self-rephrase marker was found by Mauranen (2012) to be much more frequent in the *ELFA*[5] corpus than in *MICASE*, with a ratio of almost 9:1. The result obtained here, therefore, seems more related to the use of English as an academic lingua franca rather than to awareness on the part of the lecturers of the need to reformulate concepts for the sake of better learning.

(5) S1:<then this may becomes simply **i mean** infi- infinitely large> [LELUNDEC]

On the other hand, the function of 'managing terminology' seems to be influenced by the genre under analysis, the university lecture, which favours the explicit transmission of disciplinary knowledge (example 6).

(6) S1:<this **i will call** discontinuity of the second kind okay? as i said again is just a matter of how we use the names> [LELUNDMA]

The least recurrent category of personal metatext is speech act labels. No instances of arguing verbs were observed, a result which may depend on the broad disciplinary field, i.e. Physical Sciences and Engineering, where more attention is paid to exemplifying or explaining than to proving a point and taking personal responsibility for it. In the list of possible speech act functions in Table 4, the class 'saying' was added to Ädel's (2010) original list of uses. This class includes the verbs SAY, TELL and MENTION, in decreasing order of frequency. The relatively high recourse to such verbs, particularly SAY, reflects the adoption of formulaic expressions (example 7) and is also related to the register (example 8), as SAY is extremely frequent in spoken interactions (Biber, Johansson, Leech, Conrad, & Finegan, 1999).

(7) S1:<so we are coming out of the middle age and towards times a bit more eh rational **i would say** [...]> [LELUNDCH]

(8) S1:<again **i say** that this is a removable singularity> [LELUNDMA]

The findings obtained for personal metatext indicate that the Italian lecturers of the sample show audience awareness especially in terms of the need to make discourse organisation explicit. The most frequent form in the corpus is the personal pronoun *we* (see Broggini & Murphy, 2017, for similar results). The association of inclusive *we* with the management of phorics suggests that lecturers explicitly engage students to recognise key passages of the lecture in an attempt to make discourse clear and coherent. While less frequent than *we,* the pronoun *I* is still abundantly exploited. The singular form tends to be used for metalinguistic comments and speech act labels, particularly for reformulations and in association with 'saying' verbs.

From a methodological perspective, the findings suggest that Ädel's (2010) model is effective in covering most uses of metadiscourse in EMI lectures, with the sole

5 The *ELFA* (*English as a Lingua Franca in Academic Settings*) corpus is freely available and information can be retrieved from http://www.helsinki.fi/englanti/elfa/project.html

exceptions of the function of 'enumerating' and the speech act label of 'arguing', which did not show any occurrence.

Metatext: Impersonal Forms

Table 5 presents the results for impersonal metatext. The classification adopted is based on Ädel's (2006) study of metadiscourse in learner writing. Hence, one goal is to verify the extent to which a taxonomy devised for writing may also be valid for spoken language. In this study, Ädel's framework was adjusted to mirror the one employed for personal metadiscourse, so as to allow the two forms to be compared. In particular, two main changes were made: first, references to the texts and code glosses were grouped together under the category of 'metalinguistic comments'; second, phorics markers were divided into two groups according to their function, i.e. phorics management proper and topic management. Their macro-category was labelled 'discourse organisation'.

Table 5
Impersonal Metatext

Metatext categories		*Occurrences*
Metalinguistic comments		95
Discourse organisation	Managing topics	19
	Managing phorics	96
	Total	*115*
Discourse labels		179
Total		**389**

Looking at the distribution of uses (Table 5), discourse labels are the most common type of impersonal metatext in the corpus, with 'saying and defining' (Table 6) the most recurrent category (example 9), followed by 'exemplifying' (example 10). This result may be related to both the genre of the lecture and the way knowledge is constructed in the disciplinary fields of this study.

(9) S1:<so it's a conductance and it will be **called**, transconductance> [LELUNDEC]

(10) S1:<[…] eh another eh another **example** i'd like to eh to eh to show you […]> [LELUNDEC]

Discourse organisation is the second most frequent category of impersonal metatext (see Table 7 for the items retrieved). As with personal metatext, impersonal forms are more often used to signal phorics than to signal topic management, with 'enumerating' the most recurrent function, which was totally absent in the analysis of personal forms. This use is illustrated in example (11).

(11) S1:<okay **first of all** eh starting from the efficiency […]> [LELUNDPH]

Table 6
Categories

Discourse labels	*Items*	*Occurrences*
Saying and defining	*call**	34
	*mention**	1
	*say**	3
	speak/spoke**	2
	*state**	2
	*answer**	1
	*ask**	2
	*question**	19
	*talk**	4
	*defin**	14
	*tell**	2
Exemplifying	*exampl**	27
	instance	24
	say	9
Concluding	*conclu**	6
Introducing	*Goal*	7
Other discourse labels	*suggest**	2
	*jok**	2
	summary	1
	*describ**	2
	*discuss**	14
	repeat/repetition*	1
Total		**179**

Table 7
Discourse Organisation

Metadiscourse categories	*Discourse functions*	*Markers*	*Occurrences*
Managing topics	Introducing topics	*begin**	2
		*introduc**	4
		*start**	5
	Closing topics	*end**	3
		*final**	3
		*last**	2
		Total	*19*
Managing phorics	Previewing	*following*	9
		later	5
		next	2
		*plan**	1
	Reviewing	*again*	4
		back to	2
		*previous**	1
		so far	2
	Enumerating	*first**	27
		*second**	14
		*third**	4
		three	2
		two	1
	Marking current point	*here*	7
		now	15
		Total	*96*
Total			**115**

Metalinguistic comments are the least frequent function of impersonal metatext. Nevertheless, their uses are interesting from a qualitative point of view. Indeed, in addition to predictable references to the type of event (example 12), there are also a few comments on the code (for instance, during code-switching; see example 13). In particular, a number of references to the lecturers' own *English* were noted, which are articulated using negative politeness strategies, arguably for self-protection, as shown in examples (14) and (15) (see also Table 8). It may be argued that references to the linguistic code are a type of reflexivity that is a distinguishing feature of EMI lectures, and their co-occurrence with face-saving devices may be a trait of EMI, too. This hypothesis finds some support in Dafouz et al. (2007), who notice the use of 'overt *captatio benevolentiae* resources' (p. 660) in L2 lectures.

(12) S1:<good morning everybody we start, this **lecture** which is the last but one mhm?> [LELUNDEC]

(13) S1:<he was, eh cultivating things in the country was dispersing copper sulphate verderame is in **Italian** [...]>[LELUNDCH]

(14) S1:<what i'm speaking is almost **English** more or less if you neglect the accent the rest should be more or less standard English> [LELUNDAI]

(15) S1:<i am going to ah record every lesson so that you will be able to download eh the eh the file from the from the eh web and you can see me once again so i'm not that pleasant but maybe ehm maybe that is going to help you a bit since maybe i'm not so eh so eh such a good **English** speaker [...]>[LELUNDCH]

Table 8
Metalinguistic Comments: References to the Text/code and Code Glosses

Type of metalinguistic comment	*Markers*	*Occurrences*
References to the text/code	*word**	5
	*sentence**	2
	*term**	9
	presentation	2
	*lesson**	4
	*class**	4
	*lecture**	3
	*language**	2
	English	7
	Italian	1
	*hour**	1
	time	7
	*session**	1
	course	38
	break	3
	Total	*89*
Code glosses	*mean**[6]	6
Total		**95**

6 Only definitional uses were counted, not consequential ones.

Compared to the distribution of personal metadiscourse, the figures for impersonal forms are lower, especially for phorics and topic management. This result indicates that, overall, lecturers opt for a rather explicit style when conveying metadiscourse meanings; however, as noticed with topic management, some functions are probably less exploited than one would expect in a genre such as the lecture, especially in EMI settings, where the transition from one topic to another is a crucial aspect for the comprehension of content. Impersonal metatext forms are most often used as discourse labels, which arguably assist students in processing the content and in following the lecturer's line of thought.

As for Ädel's (2006) taxonomy of impersonal metatext, as reorganised in this paper, it seems to be effective not only in covering likely uses of these devices in lectures, but also in allowing for comparisons between personal and impersonal metatext.

Audience Interaction

The last category of metadiscourse analysed is audience interaction. The taxonomy of functions in Table 9 is based on Ädel's (2010) study. The function of 'managing comprehension/channel' refers to uses where the speakers ensure that the addressees understand and that the channel allows correct transmission of the message. 'Managing audience discipline' is when speakers tell the audience what to do and comment on their behaviour, whether positively or negatively. 'Anticipating the audience's response' involves pre-empting reactions to the message by conceding points or attributing opinions and arguments to the addressees. 'Managing the message' is when speakers underline the main points of their talk or explain the desired understanding of the message. 'Imagining scenarios' allows speakers to appeal to the audience by asking them to view something from a particular perspective. Finally, 'hypothesising about/inquiring into/verifying audience's knowledge' regards comments where the lecturer expresses concern for the audience's knowledge; this use was added to Ädel's (2010) framework on the basis of the results obtained in this study (see below).

Table 9
Functions of Audience Interaction

Discourse function	*Forms*					*Total*
	I	*me*	*you*	*your*	*speaker*	
Managing comprehension/channel	0	0	4	0	0	**4**
Managing audience discipline	4	0	0	2	0	**6**
Anticipating the audience's response	0	0	0	0	1	**1**
Managing the message	3	0	0	0	0	**3**
Imagining scenarios	0	0	0	0	0	**0**
Hypothesising about/inquiring into/verifying audience's knowledge	0	3	21	0	0	**24**
Total	**7**	**3**	**25**	**2**	**1**	**38**

The quantitative data show that, of all the functions identified by Ädel (2010), only 'imagining scenarios' was not found in the corpus. However, in general, the figures for audience interaction are rather low. Examples (16) and (17) illustrate the functions of 'managing comprehension/channel' and 'managing audience discipline' respectively.

(16) S1:<**can you understand** my English? <SOMEONE ANSWERING FROM THE AUDIENCE> eh? sort of mhm?> [LELUNDAI]

(17) S1:<so just give me **your your ten minutes of of brain** because this is important> [LELUNDCS]

The most frequent uses of audience interaction occur when lecturers hypothesise about, inquire into or verify the audience's knowledge (example 18), often through direct questions inviting the students' contribution to the process of meaning-making (example 19). The second person pronoun *you* is the most frequent marker for this function (and in general for audience interaction).

(18) S1:<and it's usually found in the, eh input stage of an operational amplifier **you all know** what an operational amplifier is> [LELUNDEC]

(19) S1:<do **you remember** these points?> [LELUNDPH]

In Ädel's (2010) taxonomy, no function seems to refer to the speaker's concern for the audience's knowledge. This discrepancy is interesting because Ädel's model was developed studying most of the large lectures in *MICASE*. An examination of the setting under scrutiny in this paper may clarify this point. In the university where the lectures were video recorded, attendance is not compulsory, meaning that in each class lecturers might talk to partially different audiences. Metadiscourse may thus be used to ensure that the students possess the information needed to understand the current class. The presence of various markers with regard to the students' knowledge may also be related to EMI, with lecturers making greater efforts to ensure that everybody has the same level of background knowledge. These results point to Ädel's (2018) observation that metadiscourse use is affected not only by genre, but also by a wide range of other variables. In this case, these are the circumstances of production and reception, specifically how much class time is actually shared by lecturers and students, and the degree of background knowledge that can be assumed.

Spoken Production and Non-standard Forms of Metadiscourse

The last aspects addressed in this paper are whether metadiscourse is characterised by features typical of spoken production (i.e. forms of dysfluency), whether they can be partially attributed to the use of a non-native language, whether non-standard English instances can be found, and to what extent they may affect the function of metadiscourse units.

Starting from the features of spoken language, as Biber et al. (1999, p. 1067) observe, oral production is characterised by three principles: keeping talking, limited planning ahead and qualifying what has been said. Hence, speakers (including native ones) are likely to intersperse their utterances with signs of dysfluency such as hesitation, repetition and reformulation. These phenomena occur in order for speakers to maintain the flow of words while retrieving vocabulary from memory; they also relate to the limited time available for speakers to organise their utterances and, thus, to the speakers' need to elaborate retrospectively on what has been said.

In the data analysed for this study, signs of dysfluency are frequent in personal metadiscourse, particularly the subject pronoun *I*. In example (20), the pronoun occurs in a 'repeat' (Biber et al., 1999, p. 1055) sequence, meaning that it is reiterated twice; whereas in example (21) the speaker first repeats the subject+auxiliary structure and then engages in what Biber et al. (1999) call a 'retrace-and-repair' (p. 1062) sequence, that is, an utterance initiated with a construction that is left incomplete and immediately substituted with a new one.

(20) S1:<but we **i i don't want** to spend the first class to to discuss the exam> [LELUNDAI]

(21) S1:< **i'm not saying i am_ i i not need** to eh use the same values> [LELUNDCS]

These dysfluency phenomena are normal in spoken language. Not surprisingly, they occur at the start of utterances where speakers experience considerable planning pressure. With the data available, it is not possible to establish whether non-native speakers tend to produce more instances of dysfluency in relation to metadiscourse than native speakers. However, an initial hypothesis can be formulated that this may be the case. By using the 'sample' option of the concordance programme in the Sketch Engine, random samples of 100 occurrences of the pronoun *I* were extracted multiple times. In all 100-line samples, more than one repeat sequence of the pronoun *I* was found. According to Biber et al. (1999), in L1 English it is highly unusual to find more than one repeat sequence every one-hundred occurrences of a word, suggesting that the lectures analysed contain more repeats, at least when it comes to the use of the 1st person singular pronoun. Quite interestingly, the instances of repeats were often found related to stretches of text conveying metadiscourse meanings (see, for example, Figure 1, concordance lines 29 and 34). Therefore, based on these preliminary insights, it would seem that some uses of metadiscourse pose challenges to L2 lecturers. Clearly, this is a tentative supposition, but it points to an issue which, if empirically validated, would have implications for teacher training, and further attention to this aspect of metadiscourse is therefore advisable.

25	well i dont spend time eh on this	i	want to tell you only one thing
26	i - is there any Greek here ?	i	don't think so heh ok no Greeks
27	guess more things but now i will	i	will have to be as precise as
28	important thing for an engineer	i	think . because with chemistry
29	starting eating CO2 the way i	i	told you before exploiting sunlight
30	useful but it's also dangerous	i	collected here three tragedies
31	course , but there are eleven so	i	can tell you others but i would
32	this is a piece of copper ah .	i	used to see ah the tools that
33	sulphate verderame is in Italian	i	don't know what's the name
34	here i 'm not saying i am – i	i	not need to eh use the same values
35	is going to happen here? And	i	say no no no no no no no no no

Figure 1. Sample of concordance lines for *I* in the corpus of EMI lectures.

As regards the use of non-standard forms in metadiscourse units, the main area involved is the verb phrase, with constructions deviating from Standard English in terms of tense (example 22), lexical choice (example 23), syntax (example 24) and collocational profile (25).

(22) S1:<so, about the definitions **as i say** this is not an easy question> [LELUNDAI]

(23) S1:< **i recall you that** when we have a machine [...]> [LELUNDPH]

(24) S1:< **you remember** who was the discoverer of penicillin? he got the Nobel prize> [LELUNDCH]

(25) S1:<before, seeing the the next topic **i would like to do a remark** [...]> [LELUNDMA]

These utterances are symptomatic of the 'shaky entrenchment' (Mauranen, 2012, p. 217) of target language forms, whereby the lexical and grammatical structures of the English language are less developed and less deeply rooted than those of one's native language. It would be interesting to verify whether metadiscourse works effectively, despite these mistakes and inaccuracies. Judging from the instances obtained in this study, it would seem that the comprehensibility of the overall function of metadiscoursive units is not significantly affected. Thanks to the context (for instance, in example 22) and co-occurring features (in example 23, tense; in example 24, the use of intonation; in example 25, lexico-grammatical items), the audience is likely to recognise what instances perform a prospective or retrospective discourse organisation function, what action is intended and how it is being engaged.

Discussion and Concluding Remarks

This study has explored metadiscourse in six EMI lectures in the fields of the Physical Sciences and Engineering delivered by Italian native speaker instructors. The aim was to shed some light on how metadiscourse is employed in such lectures and identify uses of metadiscourse that may be related to the specific contextual circumstances of EMI.

The discourse functions most often performed by personal metatext are 'organising discourse' (particularly marking phorics by means of the inclusive *we*) and making 'metalinguistic comments' (especially 'reformulating' and 'managing terminology' through the pronoun *I*). On the other hand, the most recurrent forms of impersonal metatext are discourse labels (mainly the 'saying and defining' markers *call*, question** and *defin**) and items that signal discourse organisation (mostly phorics management, e.g. *first**, *second**, *now*). Audience interaction is considerably less frequent than metatext, and the uses identified occur almost exclusively when lecturers engage students in terms of their knowledge of the content of the lecture (the main marker is *you*).

The patterns of metadiscourse observed in this study may be related to three main factors: genre, discipline and the use of English as an academic lingua franca in an EMI setting. The genre of the lecture emphasises the management of terminology and favours the marking of phorics. These uses are among the most frequent in the corpus, a result that confirms the findings of Zare and Tavakoli's (2016) study of monologic and dialogic academic speech. Another genre-related feature is the absence of personal metatext markers for the speech act label 'arguing', probably 'because arguing is more common in written mode' (Zare & Tavakoli 2016, p. 9). However, the variable of discipline may also play a role, with Physical Sciences and Engineering preferring explanatory and descriptive types of teaching to argumentative ones. The extensive use of 'saying and defining' discourse acts, too, may be related to the joint influence of genre and discipline.

Some features of metadiscourse identified in this study could be related to EMI and the use of English as an academic lingua franca. These are the relatively high recourse to reformulations through the self-rephrase marker *I mean*; references to the code, specifically the international and the local language (English and Italian); and comments on the lecturer's own spoken performance, in some cases articulated through negative politeness strategies to prevent criticism. The need to save face vis-à-vis the use of English may be related to the preference of lecturers not to appear as language experts, thus making it clear that English is a lingua franca, that mistakes may occur and that meaning-making is a two-way process involving both lecturers and students. As Dafouz et al. (2007) point out, 'the use of a FL [foreign language] as the vehicle of instruction may act as a catalyst to balance the highly asymmetrical roles performed by teachers and students [...], increasing participation' (p. 660).

Hesitations and repeats were noticed in association with metadiscourse. These are dysfluency features that also characterise L1 spoken language performance. However, it may be argued that the burden that L2 processing entails for working memory makes these forms occur more frequently when lecturing in a non-native language, a hypothesis that needs corroboration in further studies. Finally, various non-standard forms were observed in metadiscourse units but, overall, these L2

features do not seem to affect the comprehensibility of metadiscourse functions thanks to the semantic contribution of the co-text. It should be pointed out, however, that non-standard stretches may be clearer to the Italian part of the audience due to the so-called 'interlanguage benefit' (Bent & Bradlow, 2003), whereby interactants who share the same L1 are likely to understand each other better in a foreign language than those who do not. Hence, further analyses should verify the extent to which intelligibility is affected by inaccuracies and mistakes.

Pedagogical Implications

Metadiscourse is an aspect of language that contributes to effective communication by facilitating understanding of the lecture content and the lecturer's line of thought (Hellekjær, 2017). The importance of metadiscourse becomes even clearer in the EMI classroom, where students may possess varying degrees of proficiency. Given its centrality, it is highly advisable that metadiscourse is included in teacher training programmes.

As various studies have emphasised the need to make teacher training 'an exercise of self-awareness, self-discovery, and personal internalisation' (Costa, 2016, p. 124), EMI instructors should, first of all, be encouraged to recognise the range of meanings that metadiscourse can convey in lectures. Awareness of metadiscourse could be raised through activities that draw from authentic experiences, with the aim of stimulating reflection on appropriate uses in specific settings (the importance of authenticity in the teaching of metadiscourse is also emphasised in Alotaibi, 2018; Akbas & Hardman, 2018; and Bogdanović & Mirović, 2018). For example, EMI instructors could be shown videos of lectures in non-Anglophone contexts and be asked to identify metadiscourse, discussing both successful practices and those which require improvement. While this activity could enhance the lecturers' familiarity with and critical awareness of metadiscourse, it could be difficult to obtain suitable materials (unless the lecturers themselves are willing to provide data by agreeing to be video recorded during their lectures). An alternative to video recordings could be the use of transcriptions from existing corpora of spoken academic discourse, such as MICASE, to familiarise lecturers with possible ways of marking metadiscourse and stimulate discussion on whether these mirror their own experience. Considering the results obtained in this study, attention could be focused, for instance, on ways in which metadiscourse is used for topic management. Lecturers could also be encouraged to work on their personal experience and be asked to complete post-lesson self-reflection grids with their own uses of metadiscourse. Finally, they could receive *ad hoc* 'formative feedback' from trainers based on the assessment of their performance during classes or micro-teaching sessions, i.e. 20-minute simulations of lectures (see Kling & Stæhr, 2011, for the benefits of formative feedback as

awareness raising tool for L2 users). Explicit training in metadiscourse, as Alotaibi (2018) observes, should not merely aim to encourage its use, which may then result in overuse, but rather to promote the strategic deployment of metadiscursive resources in order to make communication more effective. Training in metadiscourse for EMI lecturers should, therefore, go hand in hand with reflections on pedagogy and intercultural communication.

Since EMI lecturers themselves are a population whose levels of proficiency will vary, in some settings (e.g. Italy), lecturer language competence is a relevant issue and improving the language skills of teachers is high on the agenda. Thus, while the data obtained in this study seem to suggest that metadiscourse is an area of language use where formal accuracy is less important than communicative effectiveness, lecturers may nevertheless profit from being presented with a variety of lexical and grammatical resources to express metadiscourse meanings. Form-focused training may improve the lecturers' performance and self-confidence in using metadiscourse, thus reducing mistakes and dysfluency. The teaching of forms, too, may be an awareness raising exercise based on observation, discussion and controlled practice.

Methodological Implications

The use of corpus-based techniques, complemented with initial data-driven analysis to identify likely impersonal metadiscourse markers, proved successful in ensuring the coverage of most metadiscourse meanings. As regards the efficacy of Ädel's (2006; 2010) taxonomy, the data reported in this paper show that the model was capable of identifying almost all uses of metadiscourse in the corpus under scrutiny. While the classification for personal metatext, in particular, needed no amendments, that for impersonal metatext required adjustment to allow personal and impersonal categories to be compared, and audience interaction required the addition of a further function to account for the uses related to the students' knowledge.

This paper took an across-the-board approach to metadiscourse with the aim of providing an initial mapping of such a complex and multifaceted territory, hoping to identify areas for further study in larger corpora or topics needing more focused analysis. Among the strategies that require more empirical data are the use of reformulation markers, the references to the text/code and the macro-function of audience interaction; while the issues that need more deeply focused investigations (possibly in larger-scale studies, too) are topic management and the challenges to non-native lecturers posed by the articulation of metadiscourse meanings.

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