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*THE POPULARIZATION OF ACADEMIC DISCOURSE IN
THE DIGITAL AGE: A CORPUS-BASED DISCOURSE
ANALYSIS OF TED TALKS*

CANDIDATO
ANTONIO COMPAGNONE

RELATORE
CH. MA PROF.SSA
GIUDITTA CALIENDO

COORDINATORE DEL DOTTORATO
CH. MA PROF.SSA
GABRIELLA DI MARTINO

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Introduction

Our mission: spread ideas. TED is a global community, welcoming people from every discipline and culture who seek a deeper understanding of the world. We believe passionately in the power of ideas to change attitudes, lives and, ultimately, the world.

(www.ted.com)

The present study focuses on the reconceptualization of academic discourse via the Web as well as on the popularization of scientific and specialized knowledge, a still relatively unexplored research topic in discourse studies (cf. Calsamiglia 2003; Myers 2003; Garzone 2006; Caliendo 2012a), which has stimulated the interest of a number of scholars over the last thirty years (cf. Chapter 2, § 2.6).

While the need for science popularization in today's knowledge society may be taken for granted (Calsamiglia 2003), there is still much debate on the forms popularization should take – even more so in an age of digital media and a visual internet culture – and on how these forms serve a variety of purposes for the stakeholders involved, e.g., the public, the economy, political actors and last but not least, scientists and scientific communities.

Starting from – and moving beyond – the simplistic view of popularization as “writing [or speaking] that makes new or complex research and ideas accessible to non-specialists” (Luey 2010: 5), this study intends to place emphasis on the complex nature of popularization discourse and to show that, in specific contexts, experts may have purposes that go beyond the mere ‘simplification’ of specialized content for the benefit of mass audiences. Previous research on popularization discourse has focused on linguistic strategies employed by experts to simplify, organize and illustrate specialized content (e.g. Nwogu 1991; Hyland 2010; Calsamiglia/López Ferrero 2003; Ciapuscio 2003; Gülich 2003; Garzone 2006; Bamford, 2012; Bondi 2012; Garzone 2012a), placing emphasis on aspects such as content management and reformulation as well as on the negotiation of expert/non-expert roles in dialogic settings (e.g. doctor-patient roles), while less attention has been paid to the way in which experts draw on

popularizations to pursue the “objectives of their professions” (Bhatia 2012), rather than merely communicate a ‘simplified’ version of science. In fact, popularization discourse not only involves processes of content reformulation but also, and above all, processes of recontextualization (Calsamiglia 2003; Calsamiglia/van Dijk 2004), the latter depending upon the constraints of the communicative event (e.g. speaker’s intentions, audience’s expectations) as well as of the media employed.

Against this background, this study aims at exploring the way in which academics engage in practices of science popularization to achieve objectives other than disseminating knowledge, e.g., building up their professional identities and promoting their research activities at the same time as entertaining mass audiences. To pursue this aim, special attention has been given to the genre of TED¹ talks, popularizing speeches delivered by experts in different fields, which cover a variety of topics and which target multiple and varied audiences.

TED talks are a widespread web-mediated format (cf. Chapter 1), which has only recently started to stimulate the interest of discourse analysts (Caliendo 2012b; Caliendo/Compagnone 2014; Compagnone 2014; Scotto di Carlo 2014). Its complex hybrid nature leaves space for a variety of theoretical and methodological approaches.

Specifically, my objective has been to explore the way in which academic discourse is reconceptualized through the web-mediated genre of TED talks. To this end, the following general research question was established:

- (1) Which communicative purposes do academics attempt to achieve through delivering TED talks?

In a society where scientific knowledge is increasingly becoming the main source of economical capital (Stehr 2003: 3), participation in practices of knowledge popularization and dissemination is becoming almost essential for academics. This is supported by a discursive climate where major players assert that “more than 50 per cent of Gross Domestic Product (GDP) in the major OECD economies is now knowledge-based” (OECD 1996: 9).

¹ The acronym TED stands for Technology, Entertainment and Design.

In knowledge-based economies, knowledge distribution has just as much value for economic performance as knowledge production (OECD 1996). This is especially true for enterprises and national economies as a whole, where success is strongly contingent upon the way in which they effectively gather and utilize knowledge. A fundamental role in the distribution of knowledge within society is played by the science system, which consists of public research laboratories and institutions of higher education.

Besides transmitting knowledge to novices through education and training, the science system is also responsible for the transfer of knowledge to the wider economy. At the same time, dissemination of knowledge is a key practice for the survival of the science system itself. It allows academics (a) to keep their ‘social prestige’ – especially now that user-generated content disseminated through digital media has blurred the boundaries between knowledge producers and knowledge consumers – and, more importantly, (b) to obtain financial support – especially from the private sector, which is the main source of research funding in knowledge-based economies. So, it is against this backdrop, that academics are required to persuade both the lay public and fund providers of the quality and applicability of their research and ideas. To do so academics have to present themselves as reliable sources of information, while communicating knowledge to non-experts through popularizations. On the basis of these premises, two more specific research questions were established to explore academic TED talks:

- (2) In what ways do academic TED speakers present themselves discursively on the TED stage?
- (3) In what ways do they present knowledge for their own communicative purposes as well as within the conventions of the genre under scrutiny?

The present study proceeds from the assumption that the transfer of knowledge to economic and social actors (as well as to the lay public) on the part of universities and research institutes is a complex social practice, and that its exploration can provide an account of the way in which academic discourse and society at large now work. Despite adopting a language-centered approach, the present study takes a strong sociological slant and attempts to show that popularization is a professional practice which fits into

the wider context of “professional culture” (Bhatia 2012), while language is just a tool popularizers use to achieve their objectives.

The present study is structured as follows. Chapter 1 provides a contextualization of TED and offers an account of the way in which it became a widespread popularizing format. Communication technologies developed over recent centuries (i.e. telegraph, telephone, radio and television) have enhanced both one-way (i.e. monologic) and two-way (i.e. dialogic) communication. Most recently, the Internet has contributed to the development of new genres, or “formats”, which mix together different genres, text types and semiotic modes (i.e. written, spoken, audio and video) (Fairclough 2003: 77). Thanks to the Internet, TED has evolved from a mere conference into a complex digital platform, expanding its agenda and reaching out all over the world so as to become a hub for a vast array of communities of both experts and non-experts.

Chapter 2 starts from a review of the literature concerning the main research fields drawn on by the present study so as to provide an account of the theoretical framework adopted. First of all attention is paid to research in the field of English for Specific Purposes (ESP) – with particular reference to the sub-field of English for Academic Purposes (EAP). TED talks are all delivered in English. Besides, in this study special attention is paid to the way academics make use of this popularizing format. Against this backdrop – although its pedagogical aim is ignored in this study – research in the field of ESP and the sub-field of EAP (e.g. Rounds 1987a, 1987b; Hyland 1998; Fortanet 2004, 2006; Artiga León 2006; Hyland 2009a, 2009b) has proved to be useful in detecting changes in academic language usage within the new pragmatic setting of TED as opposed to ‘traditional’ academic contexts (e.g. university classroom).

In order to explore the genre of TED talks from a wider discursive perspective, research in the field of Genre Analysis (GA) was also essential. The present study moves on from the more traditional versions of genre theory (Swales 1990, 2004; Bhatia 1993, 2004) to the most recent approach of Critical Genre Analysis (CGA) (Bhatia 2007, 2012), in an attempt to show the way in which TED is used by academics to achieve specific professional objectives, i.e., building up their image as experts and promoting their research.

From a macro perspective, the present study finds its place within the theoretical framework of Discourse Analysis (DA). The interest in discourse on the part of scholars from a variety of disciplinary fields has made analytical approaches to discourse more and more interdisciplinary, from both a theoretical and a methodological perspective. This is the main reason why DA has been deemed a suitable theoretical framework for this study. In the field of DA a distinction is usually drawn between “critical” and “non-critical” discourse studies, the latter regarded as inherently descriptive and, unlike critical approaches, not focusing on the role played by discourse in the construction of ideologies and identities (Fairclough 1992). This study merges together both critical and descriptive approaches in the attempt to (1) identify the distinguishing features of academic TED talks and (2) understand the way in which academics make use of this popularizing format to achieve their professional objectives.

Finally, attention has been given to research on popularization discourse in order to establish the state of the art and provide an account of the way in which the concept of popularization has evolved over the last three decades.

Chapter 3 provides a description of the corpus and the methodology followed to collect and analyse the data. For this study, I carried out a contrastive corpus-based discourse analysis, drawing on both quantitative and qualitative methods. The combination of these two techniques is not a new practice (e.g. Stubbs 1994). However, only recently has specific emphasis been placed on the usefulness and effectiveness of mixed methods in discourse studies (e.g. Baker 2005, 2006; McEnery 2006; Baker *et al.* 2008, 2013) for overcoming the limitations of both quantitative and qualitative approaches when used alone.

For the purposes of this research, a contrastive analysis was performed by comparing a corpus of transcribed TED talks delivered by academics (TED_ac corpus) to a corpus of university lectures drawn from the *Michigan Corpus of Academic Spoken English* (MICASE_lect corpus). Making use of computer software (AntConc and WordSmith Tools), frequencies and collocational patterns were examined in order to pick out and compare distinguishing features of academic discourse in the two contexts under scrutiny.

The university lecture is one of the academic genres (cf. Caliendo 2012b) that shares the highest number of features with TED talks. In both contexts experts attempt

to convey content to an audience of (semi-)lay people by employing different semiotic modes (i.e. spoken, written, audio and video) within a mostly monologic speech event. At the same time, a substantial difference between these two genres has to be taken into account: while university lectures are inherently pedagogic in their attempt to educate and train students, TED talks are a popularizing genre aimed at a larger and more heterogeneous audience that is expecting to receive some form of ‘smart’ entertainment. Against this background, the comparison between university lectures and TED talks was considered apt for highlighting the way in which academics ‘appropriate’ the TED stage in order to achieve alternative purposes other than merely communicating knowledge.

Chapter 4 illustrates and discusses the results of the contrastive corpus-assisted analysis. The chapter is divided into three parts. In the first, section (4.2), attention is paid to the way in which academics discursively build up their identity as experts and express their membership credentials within scientific communities by making use of personal pronouns, with a special focus on the pronoun *we* – which is statistically salient in academic TED talks. The second, section (4.3), focuses on the way knowledge is presented by academics in the two contexts under investigation. More precisely, consideration is given to the category of epistemic lexical verbs (ELVs), used by speakers to encode the epistemic source used to convey knowledge in discourse. Finally, in section (4.4), consideration is given to the notion of lexical aspect (or *Aktionsart*), so as to explore the way in which “states of affairs” (Van Valin/LaPolla 1997) are presented on the TED stage as opposed to the university classroom. More precisely, emphasis is placed on the verb collocates of the pronoun *we* – sorted on the basis of their main inherent lexical properties – to better explore the way academics speaking at TED present themselves while depicting specific situations they are involved in.

The dissertation concludes with a summary of the main findings emerging from the contrastive analysis of the genre of TED talks vs. university lectures, also making suggestions for future research about the TED format, which is open to a plethora of research venues (Caliendo 2012b) and leaves space for a variety of approaches.

Chapter 1 – TED Talks

1.1 TED talks: a new popularizing genre

The genre of TED talks has only recently started to be the object of study from a discursive perspective (e.g. Caliendo 2012b; Caliendo/Compagnone 2014; Compagnone 2014; Scotto di Carlo 2014). In her study, Caliendo acknowledges the novelty of this format and emphasizes its “discursive hybridity” (2012b: 113), pointing out the fact that TED talks lie at the intersection of a number of genre types (e.g. university lectures, newspaper articles, conference presentations and TV science programmes), mixing different semiotic modes. TED talks provide a clear example of the way in which web-mediated popularization discourse has spurred the emergence of new genres, which result from the contamination of different discursive (i.e. social) practices (cf. Caliendo 2012a). Against this backdrop, exploring TED talks was seen as useful for the aims of the present study and for contributing to theory concerning popularization discourse.

Aimed at a heterogeneous audience, TED talks are delivered by different types of expert from different professional fields and touch on a vast array of topics. As regards the delivery style of TED talks, Caliendo argues as follows:

[...] TED talks are similar to newspaper articles in that they prioritise results rather than methods (Bamford 2012) – that is what is novel, exciting and groundbreaking in the research (what in the press would be called ‘newsworthy’). Not dissimilarly from university lectures, TED talks are “planned speech events” (Salvi 2012: 75) during which speakers often employ multimedia resources such as visuals, music or filmed extracts. Like conference presentations, TED talks have a limited time slot, which cannot exceed eighteen minutes. This constraint certainly affects the information delivered, which needs to be concise, direct, accurately paced and selected.

In addition to these features, the delivery style of a TED talk is also dependent upon the professional category as well as upon the disciplinary field the speaker comes from. Nevertheless, the format presents a set of requirements to comply with. In fact, experts giving a TED talk are asked to observe the so-called “TED commandments”², a list of ten rules which reads as follows:

- (1) Dream big. Strive to create the best talk you have ever given. Reveal something never seen before. Do something the audience will remember forever. Share an idea that could change the world.
- (2) Show us the real you. Share your passions, your dreams...and also your fears. Be vulnerable. Speak of failure as well as success.
- (3) Make the complex plain. Don't try to dazzle intellectually. Don't speak in abstractions. Explain! Give examples. Tell stories. Be specific.
- (4) Connect with people's emotions. Make us laugh! Make us cry!
- (5) Don't flaunt your ego. Don't boast. It's the surest way to switch everyone off.
- (6) No selling from the stage! Unless we have specifically asked you to, do not talk about your company or organization. And don't even think about pitching your products or services or asking for funding from stage.
- (7) Feel free to comment on other speakers, to praise or to criticize. Controversy energizes! Enthusiastic endorsement is powerful!
- (8) If possible, don't read your talk. Notes are fine. But if the choice is between reading or rambling, then read!
- (9) You must end your talk on time. Doing otherwise is to steal time from the people that follow you. We won't allow it.
- (10) Rehearse your talk in front of a trusted friend. For timing, for clarity, for impact.

This set of rules provides an essential insight for understanding the conventions of the genre of TED talks. Most of these rules emphasize the popularizing nature of the format: rules (1)–(4) prioritize features such as sensationalism, involvement and

² Before giving a TED talk, speakers are sent a list containing the TED commandments. On February 20, 2006, TED speaker Rives (<<http://www.ted.com/speakers/rives>> Last accessed: December 8, 2014) posted a picture of the TED commandments on his blog. Source: <<http://www.shoplifewindchimes.com/0206archive.html>> (Last accessed: December 8, 2014)

engagement of the hearer/viewer, while rules (9) and (10) lay stress on prerequisites such as simplicity, clarity and brevity.

As a new genre with its own conventions, not only has TED become a well-known and widespread format (see following section 1.2), it also seems to have become a prototypical form of knowledge dissemination. This notion is confirmed, in the first instance, by the proliferation of more recent projects which are clearly inspired by the TED format. One of these is the POP Tech project (Figure 1.1) which, like TED, draws on the conference format in order to bring together experts from different professional fields, while their talks are stored and made freely available on an online platform. Further confirmation is apparent from the fact that on March 4, 2014, Forbes.com-columnist-and-acclaimed-communication-coach Carmine Gallo – authors of bestsellers such as *The Presentation Secrets of Steve Jobs* (2009), *The Innovation Secrets of Steve Jobs* (2010) and *The Apple Experience* (2012) – published *Talk Like TED. The 9 Public-Speaking Secrets of the World's Top Minds*. In his book, Gallo celebrates the TED format – which he acknowledges as a model “for anyone who delivers presentations, sells products and services, or leads people who need to be inspired” (Gallo 2014: 2) – and provides a description of the format as well as an account of the reasons why it became so successful worldwide.

FIGURE 1.1
POP Tech website (www.poptech.org)



Over the last thirty years, by means of the TED project, the Sapling Foundation has managed to reach as large and varied an audience as possible. TED talks have established themselves as one of the best-known popularizing formats mediated through the Web, also working as a hub for a net of interrelated expert and non-expert communities.

The next section will trace a history of TED, in an attempt to provide an account of the way it became the widespread and popular format it is today, as well as to provide a contextualization of the genre, highlighting some of its criticalities.

1.2 TED talks: a format or a brand?

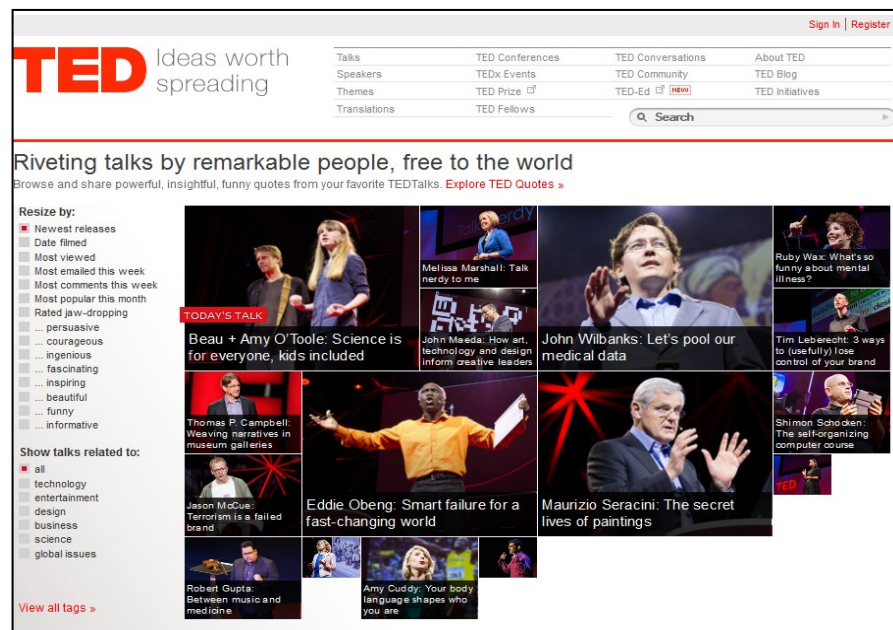
Founded and chaired by architect and designer Richard Saul Wurman and his partner Harry Marks, in 1984 TED started out as a conference gathering experts from three main fields: technology, entertainment and design (that is what the acronym TED stands for). From 1990, the TED conference took place annually in Monterey, California, giving voice to experts from a wider range of fields and disciplines.

In 2001 TED was acquired by the Sapling Foundation, an organization founded by the new-media entrepreneur Chris Anderson. The Sapling Foundation is a private non-profit under section 501(c)(3) of the Internal Revenue Code³, i.e. a tax-exempt organization which cannot engage either in political or legislative activities (i.e. lobbying), the earnings of which may not benefit any shareholder or individual within the organization. As can be read on the official website⁴, along with sponsorships, foundation support, licensing fees and book sales, TED is mainly funded by conference attendance fees.

³ Source: <[http://www.irs.gov/Charities-&-Non-Profits/Charitable-Organizations/Exemption-Requirements-Section-501\(c\)\(3\)-Organizations](http://www.irs.gov/Charities-&-Non-Profits/Charitable-Organizations/Exemption-Requirements-Section-501(c)(3)-Organizations)> (Last accessed: December 8, 2014)

⁴ Source: <<http://www.ted.com/about/our-organization/how-ted-works>> (Last accessed: December 8, 2014)

FIGURE 1.2
TED website homepage (www.ted.com)



Under the management of the Sapling Foundation, the TED project has been expanded remarkably by means of different programmes and initiatives. First of all, the Web contributed to making the TED format popular worldwide. The first six TED talks filmed in Monterey were made freely available online in 2006, while in 2007 the official TED website was launched (Figure 2 above). As is stated on TED.com⁵:

At the end of their first year, TED Talks had been watched two million times. By the end of 2009, that number had jumped to 200 million, establishing TED as an important platform. In November of 2012, TED Talks crossed the mark of one billion collective views. (TED.com)

At present, TED.com is an archive collection of almost two thousand talks. Every talk is available on the website not only as a video podcast but also in the form of a transcript. Additionally, thanks to the Open Translation Project⁶, TED talks are subtitled and

⁵ Source: <<http://www.ted.com/about/programs-initiatives/ted-talks>> (Last accessed: December 8, 2014)

⁶ Source: <<http://www.ted.com/participate/translate>> (Last accessed: December 8, 2014)

translated into different languages by an international community of volunteer translators.

However, TED.com is not just an archive of recorded talks. Over the years, the TED website has actually been converted into a social media platform. Thanks to the TED conversation space⁷ and the TED blog⁸, TED speakers as well as registered users can, in fact, start public debates and share ideas, interacting with each other as members of the TED community.

The conference, now held annually in Vancouver, British Columbia, Canada is the core TED event, while the online platform is the main means through which the TED format is disseminated. However, many other initiatives have been launched which have helped advertise TED globally. In 2005 a complementary annual itinerant conference, TEDGlobal⁹, was added to promote TED outside the US and a TED Prize¹⁰ was introduced to support projects and ideas. In 2008, the TEDActive annual event¹¹ was launched: a live simulcast of the Vancouver TED spring conference taking place in Whistler, British Columbia, Canada, allowing people to attend the event at a relatively lower price (an annual 4,250 dollar subscription) compared to standard membership fees¹². Moreover, as the TED website reports, a series of alternative special events have been added to the TEDGlobal and TEDActive conferences:

TED also regularly hosts other special events around the globe. TEDIndia was held in November 2009 in Mysore, celebrating and exploring the beckoning future of South Asia. TEDWomen was held in 2010 in Washington, DC, and again in 2013 in San Francisco, asking the question, how are women and girls reshaping the future? TEDYouth was held in New York City in 2011 and 2012, and in New Orleans in 2013, with short talks designed to stimulate the curiosity of students. TEDCity2.0, powered by the 2012 TED Prize, presented a day of new thinking about urban life. TED also hosts smaller events, including TED Salons, evening-length events with speakers and performers, and TED@250 events, curated by TED staff in our New York office to explore issues of interest. Meanwhile, TED

⁷ Source: <<http://www.ted.com/about/programs-initiatives/ted-conversations>> (Last accessed: December 8, 2014)

⁸ Source: <<http://blog.ted.com/>> (Last accessed: December 8, 2014)

⁹ Source: <<http://www.ted.com/attend/conferences/tedglobal>> (Last accessed: December 8, 2014)

¹⁰ Source: <<http://www.ted.com/about/programs-initiatives/ted-prize>> (Last accessed: December 8, 2014)

¹¹ Source: <<http://www.ted.com/attend/conferences/tedactive>> (Last accessed: December 8, 2014)

¹² In order to attend a TED conference it is necessary to apply for membership. Membership costs range from \$ 15,000 (for a 5-year membership) to \$ 8,500 (for a standard annual membership).

Institute events bring TED's curatorial lens to the ideas found within large companies.
(TED.com)

Besides all the different events directly organized by TED, the international success of the format is also demonstrated by the spread of TEDx events¹³ – alternative TED conferences planned and coordinated either by public or private institutions (e.g. universities, non-profits, corporations) all over the world under a free license granted by TED.

In addition to the TED conferences, a number of other initiatives have been launched which have contributed to expanding the TED format and converting it not only into a mass media product but also into an actual brand. Thanks to the TED Books¹⁴ initiative, for instance, TED is now also a publishing house that offers TED speakers the chance to pursue and promote their ideas and projects more in depth, well beyond the eighteen-minute time slot allotted for a talk. In September 2014, the first TED book, *The Terrorist's Son* by TED speaker Zak Ebrahim, was published and advertised through the TED website.

Another project worth mentioning is the TED-Ed initiative¹⁵, which involves the collaboration of TED with the social network YouTube. Thanks to the TED-Ed platform, teachers are given the chance to build up their own lessons around a video podcast they can choose from the Web by means of the TED-Ed search engine. Besides using the TED-Ed lessons in their classrooms, under the motto "lessons worth sharing", teachers are also invited to make their versions available on the TED website for other web users.

By means of the initiative Ads Worth Spreading¹⁶, huge companies (e.g. Adobe, IBM, Honda) are instead given the chance to promote themselves via the TED channel and its affiliated social networks (i.e. YouTube, Twitter and Facebook) as long as they produce original ads based around enticing and appealing ideas, scrutinized by the TED committee.

¹³ Source: <<http://www.ted.com/about/programs-initiatives/tedx-program>> (Last accessed: December 8, 2014)

¹⁴ Source: <<http://www.ted.com/read/ted-books>> (Last accessed: December 8, 2014)

¹⁵ Source: <<http://www.ted.com/about/programs-initiatives/ted-ed>> (Last accessed: December 8, 2014)

¹⁶ Source: <<http://www.ted.com/about/programs-initiatives/ads-worth-spreading>> (Last accessed: December 8, 2014)

Apart from TED.com, the TED format is also publicized by means of a series of alternative media channels. TED is, in fact, not only broadcast both via the National Public Radio (NPR) channel (thanks to the TED Radio Hour initiative¹⁷) and the Public Broadcasting Service (PBS) television network, it is also advertised through social networks such as Facebook, Google+, Instagram, Pinterest, Twitter and YouTube.

Despite its success, TED has also attracted criticism over the years. As well as being held at fault for its high membership costs, TED has been accused of being elitist about the choice of speakers and biased in the selection of topics. A whole section – “Debunking TED myths”¹⁸ – aiming at responding to these critics can be found on the TED website. Here, high fee costs, for example, are justified by the organization declaring that all the revenues are spent to support “big projects” such as “making TED [t]alks available for free” and “supporting the independent TEDx community around the world”.

As far as the selection of presenters is concerned, everybody can apply to be a TED speaker by filling out a recommendation form available on the TED website¹⁹. Applicants are required to provide information about their occupation, honors and distinctions, as well as to load links to their articles, personal web-pages and/or video podcasts featuring public presentations. Speakers are selected by a committee. The criteria followed by the speaker selection team are not illustrated on the website. The following is all there is available about the ‘ideal’ TED speaker on the ‘speaking at TED’ section²⁰:

At TED, we search year-round for presenters who will inform and inspire, surprise and delight. Our presenters run the world’s most admired companies and design its best-loved products; they invent world-changing devices and create ground-breaking media. They are trusted voices and convention-breaking mavericks, icons and geniuses. (TED.com)

¹⁷ Source: <<http://www.npr.org/templates/story/story.php?storyId=5057>> (Last accessed: December 8, 2014)

¹⁸ Source: <<http://www.ted.com/about/our-organization/how-ted-works/debunking-ted-myths>> (Last accessed: December 8, 2014)

¹⁹ Source: <<http://www.ted.com/nominate/speaker>> (Last accessed: December 8, 2014)

²⁰ Source: <<http://www.ted.com/about/conferences/speaking-at-ted>> (Last accessed: December 8, 2014)

In addition to the regular speaker selection, on the basis of the TED Fellows Program²¹, forty speakers across different disciplines are selected by the TED board every year to present their projects and ideas at one of the annual TED conferences (see below). They become members of the TED community and have access to special training and funds.

Speakers do not get paid to present a talk, nor do they have to pay to speak at TED, while sponsors are not allowed to participate as speakers.

As far as the choice of topics is concerned, as can be seen from the topic list available on the TED website²², at present, among the top ten topics covered, technology (549 talks) is the most prevalent, followed by science (418 talks), global issues (392 talks), design (324 talks), business (272 talks), entertainment (272 talks), education (149 talks), health (117 talks), music (111 talks) and biology (105). This is not surprising if one considers the fact that TED traces its roots back to the market culture of the Silicon Valley, celebrating technological innovation as the main expression of socio-economic development. It cannot be a mere coincidence that, in the foundation's most recent (2011) 990 tax return, the highest donation to TED (\$ 1,100,000) came from the Bill and Melinda Gates foundation.²³

To sum up, like Google and Wikipedia – which have become synonymous with ‘web search’ and ‘looking up knowledge online’, respectively – TED talks seem to have become prototypical forms of spoken popularization, working as a benchmark for all kinds of (web-based) popularizing talks. They are undoubtedly a powerful instrument in the hands of various stakeholders with various objectives. This is what makes TED talks a hybrid and complex instance of popularizing discourse which can be explored from a number of perspectives.

However, the main objective of this study is to explore how a specific professional category of experts, i.e., academics, make use of this format to achieve their purposes. Against this premise, every inference the present study makes on the genre of TED talks has to be regarded primarily as an attempt to interpret and describe the way in which academic discourse is reconceptualized through the Web. Exploring

²¹ Source: <<http://www.ted.com/about/programs-initiatives/ted-fellows-program>>
(Last accessed: December 8, 2014)

²² Source: <<http://www.ted.com/topics>> (Last accessed: December 8, 2014)

²³ Source: <http://207.153.189.83/EINS/943235545/943235545_2011_08dff609.PDF>
(Last accessed: December 8, 2014)

the genre of TED talks was, in fact, considered pertinent to understanding the way in which social practices of knowledge production and distribution have changed in line with the conventions of a “professional culture” (Bhatia 2012).

Chapter 2 – Literature review

2.1 Research objectives and state of the art

As stated in the introductory section, the present study explores the way in which academic discourse is reconceptualized through TED talks, a popularizing web-mediated genre still unexplored from a discursive perspective, which has only recently started to stimulate the interest of scholars in the field of linguistics and discourse studies (Caliendo 2012b; Compagnone 2014; Caliendo/Compagnone 2014; Scotto di Carlo 2014). To this end, the study relies upon the research fields of English for Specific Purposes (ESP) – with a special focus on English for Academic Purposes (EAP) – Genre Analysis (GA) and Discourse Analysis (DA). This broad theoretical framework lends itself well to exploring the genre of TED talks from both a textual and a sociological perspective as it leaves space for interdisciplinarity and favors the combination of different methods.

While acknowledging the constitutive role of language within society, genre analysts argue that changes in genre conventions are an integral part of social transformations (Swales 1990, 2004; Fairclough 2003; Bhatia 1993, 2004, 2007, 2012). Thus, detecting changes in genre conventions is thought to help in understanding processes of social change.

Against this backdrop, inquiring into popularization discourse and its forms is considered of great utility for making an account of the way in which our ‘knowledge-based’ society works. Although it adopts a language-centered approach, the present research is aimed at showing that popularization discourse is a complex phenomenon which goes beyond mere practices of knowledge reformulation for a lay public and involves different communicative purposes on the part of popularizers, while language (like any other semiotic resource) is just a tool experts (i.e. academics) draw on in order to achieve their professional objectives.

In this section a review will be provided of previous literature in the above-mentioned research fields. Attention will first be paid to the research field of ESP, with particular reference to the sub-area of EAP, as well as to GA. Secondly, emphasis will be placed on DA and then, finally, consideration will be given to the study of popularization of scientific knowledge.

2.2 English for specific purposes

A distinguishing feature of research in the field of ESP is its didactic aim. As argued by Paltridge and Starfield (2011: 2) “English for Specific Purposes refers to the teaching and learning of English as a second or foreign language where the goal of the learners is to use English in a particular domain.” From this perspective, “ESP courses thus place emphasis on the language, skills, and genres appropriate to the specific activities the learners need to carry out in English” (Paltridge/Starfield *ibid.*).

Tracing the origins of ESP, Hutchinson and Waters (2011: 5) identify two major factors which favoured the rise of ESP and made it become perhaps the most important aspect of English language teaching worldwide: (i) the demand for an international language due to the global spread of technology and commerce after World War II in combination with (ii) the economic power held by the United States at that time. Apparently these two factors changed the perception of English language learning worldwide. As pointed out by Hutchinson and Waters (1987: 6):

[...] as English became the accepted international language of technology and commerce, it created a new generation of learners who knew specifically why they were learning a language – businessmen and women who wanted to sell their products, mechanics who had to read instruction manuals, doctors who needed to keep up with developments in their fields and a whole range of students whose course of study included textbooks and journals only available in English. All these and many others needed English and, most importantly, they knew why they needed it.

Besides this new *status quo* held by English, another trend affecting the development of ESP was a shift in focus, at a certain point in history, in the field of Linguistics. From

the 1970s (Widdowson 1978), researchers started to show increasing interest in describing language use within real communicative contexts as opposed to research on language usage, where the focus was mainly on grammar rules. Such a shift placed emphasis on language variation within the specific context(s) of use and this matched perfectly to the development of English courses aimed at specific groups of learners.

Finally, a relevant contribution to the development of ESP came from educational psychology (Rodgers 1979), in which a learner-centered approach attached great importance to the assessment of learners' needs and interests in order to design effective ESP courses. From this perspective, an important distinction was drawn between learners who required English to study and those who needed it for work or training.

Against this background, the research field of ESP has expanded considerably over the years, and a number of sub-areas have emerged. It is worth mentioning, among others, English for Science and Technology (EST) (Anthony 1999; Artemeva 1998; Artemeva/Fox 2010; Artemeva/Logie/St Martin 1999; Barber 1988; Bazerman 1984; Herbert 1965; Jackson/Meyer/Parkinson 2006; Johnstone/Lee/McGregor 1996; Luzon 2009; Parkinson 2013; Swales 1971; Ward 2007, 2009), English for Academic Purposes (EAP) (cf. § 2.2.), English in the workplace (Marra 2013), Business English (Chiappini/Zhang 2013), Legal English (Bhatia 1997, 2009; Candlin *et al.* 2002; Engberg 2000, 2002, 2009a, 2009b, 2010, 2013a, 2013b, 2013c, 2014a, 2014b; Engberg/Burr 2009; Engberg/Rasmussen 2010; Engberg/Arinas 2011; Garzone 2001, 2003, 2007, 2008, 2010, 2012b, 2013a, 2013b; Garzone/Degano 2012; Garzone *et al.* 2012; Gibbons 1999; Gibbons/Turell 2008; Goddard 2010; Gotti 2009; Melinkoff 1963; Northcott 2013; Tiersma 2008a, 2008b), English for Medical Purposes (EMP) (Ferguson 2013), as well as the relatively new fields of thesis and dissertation writing (Thompson 2013) and English for Research Publication Purposes (ERPP) (Flowerdew 2013).

Emphasizing the pedagogical nature of ESP, Ann Johns (2013), previous co-editor of the international journal *English for Specific Purposes*²⁴ (ESPJ), identified four stages in the historical development of this research field: "The Early Years" (1962-

²⁴ Source: <<http://www.journals.elsevier.com/english-for-specific-purposes>> (Last accessed: December 8, 2014)

1981), “The Recent Past” (1981-1990), “The Modern Era” (1990-2011) and “The Future” (2011 plus).

For “The Early Years” period, 1962 has been conventionally established as the starting date for the history of ESP as it is the date when Barber’s “Some Measurable Characteristics of Modern Scientific Prose” was published, the earliest of a series of ESP-related articles collected in Swales’ *Episodes in ESP* (1988).

In this period the main interest of ESP specialists was in EST in academic contexts. At the beginning, research in the area of EST was mainly descriptive and aimed at providing repertoires of grammatical features of academic written genres (e.g. textbooks and research articles) on the basis of statistical data. Subsequently, attention also started to be paid to the identification of the discursive functions of specific lexical features of EST, with reference to the rhetorical purposes of texts. This new perspective was adopted by the Washington School (e.g. Lackstrom, Selinker, Trimble) and placed emphasis on what is still considered as one of the main foci of ESP.

The second period is mainly characterized by the contribution of John Swales whose approach, previously conceived in *Aspects of Article Introductions* (1981), started to become popular in the scientific community as of 1990 thanks to his work *Genre Analysis*.²⁵ In this period, Swales and Johns’ main concern as editors of ESPJ was to broaden the scope of ESP research beyond the area of EST and encompass a larger community of TESOL professionals. Therefore, while research on the rhetorical function of linguistic devices in written (Adams-Smith 1984; Malcom 1987; Hanania/Akhtar 1985) and spoken academic genres (Rounds 1987a, 1987b) was still in vogue, new research topics such as teacher training, student needs assessment (Jacobson 1986; Tarantino 1988) and computer mediated communication (DuBois 1980, 1985; Zak/Dudley Evans 1986; Murray 1988; Herring 1996, 1999, 2001, 2004) started to emerge.

During these first two periods two fundamental concepts, i.e., those of ‘genre’ and ‘rhetorical moves’, were introduced in ESP theory. However “what was missing, among other things, was the sophisticated use of the computer for gathering corpus data, topics relating to additional ESP areas, and, more triangulated, critical, and contextualized methodological approaches” (Johns 2011: 12).

²⁵ The notion of ‘genre’ is discussed in more detail in section 2.4.

It was during the “Modern Era” that research on written (Hyland 2005) and spoken academic genres (Fortanet 2004, 2006) started to be increasingly assisted by the use of corpora, while attention was also being paid to professional genres (Bhatia 1993, 2004, 2007, 2008a, 2008b). In this period, ESP specialists also developed a particular interest in contrastive discourse analysis as well as in intercultural issues in academic contexts (e.g. the classroom) (Swales/Mustafa 1984; Salager-Meyer 1990). The modern era in ESP was also marked by the establishment of two international journals: the *Journal of Second Language Writing*²⁶ (JSLW) and the *Journal of English for Academic Purposes*²⁷ (JEAP). Together with ESPJ – which started to see an increase in international submissions – both JSLW and JEAP collected contributions from different scholars all over the world. This was mainly due to the fact that academics were required by their home institutions to publish in international high ranking journals. All these trends naturally played a fundamental role in broadening the scope of ESP research.

Finally, as far as the future trends of ESP are concerned, Ann Johns (2011: 22) presents an interesting forecast when she states that:

Four words may serve to summarize what the future may bring to ESP: *variety*, in topics, methodologies, rhetorics (e.g. the visual and multimodal), writer’s stance, and more; *context*, as the locales for research become diversified, bring to the fore the specific contexts of classrooms, businesses, online media – and in learners’ cognition – *complexity*, realized through methodological triangulation, and finally, *critique*, not only of the researcher’s work and pedagogies but of the researcher him/herself, through self-reflection.

As can be seen from this outline, language teaching (and learning) is a predominant topic in ESP. The present study takes strong inspiration from this field, though it ignores its pedagogical aim. More specifically, special attention is devoted to the sub-field of EAP (see § 2.3), as it provided both a theoretical and methodological framework to look at the reconceptualization of academic discourse, from the traditional context of the university classroom to that of TED.

²⁶ Source: <<http://www.journals.elsevier.com/journal-of-second-language-writing/>> (Last accessed: December 8, 2014)

²⁷ Source: <<http://www.journals.elsevier.com/journal-of-english-for-academic-purposes/>> (Last accessed: December 8, 2014)

2.3 English for Academic Purposes

EAP is a core area of ESP devoted to research on the teaching of English (to both native and non-native speakers) to perform tasks and accomplish specific purposes within academic settings. In its early days the focus of EAP research was mainly on issues such as “error control” and “style polishing”. Over the years, EAP broadened its scope. As pointed out by Hyland (2006: 2):

[...] current EAP aims at capturing ‘thicker’ descriptions of language use in the academy at all age and proficiency levels, incorporating and often going beyond immediate communicative contexts to understand the nature of disciplinary knowledge itself. It employs a range of interdisciplinary influences for its research methods, theories and practices to provide insights into the structures and meanings of spoken, written, visual and electronic academic texts, into the demands placed by academic contexts on communicative behaviours, and into the pedagogic practices by which these behaviours can be developed. It is, in short, specialized English-language teaching grounded in the social, cognitive and linguistic demands of academic target situations, providing focused instruction informed by an understanding of texts and the constraints of academic contexts.

In an attempt to sketch out an overview of EAP, Maggie Charles (2013) looks at this research area from three different perspectives: (1) EAP and the use of corpora, (2) EAP and genre analysis and (3) EAP and social context.

As far as the use of corpora in EAP is concerned, as Hyland (2006: 58) points out, as representative collections of naturally occurring texts belonging to a specific genre, corpora “offer fresh insights on familiar, but perhaps unnoticed, features of language use” and provide “an evidence-based approach to language teaching”. In EAP corpora serve both a “direct” and “indirect” function for teaching and research (Leech 1997). On the one hand, they can be used as pedagogic tools in the classroom, while on the other they can provide data to carry out theoretical research on academic genres and build up teaching materials.

During the course of the twenty-first century, different corpora of both written and spoken academic discourse have been built and made available to researchers and practitioners. Among the most important projects are the *British Academic Written*

*English corpus*²⁸ (BAWE) and the *Michigan Corpus of Upper-level Student Papers*²⁹ (MICUSP), consisting of written texts produced by undergraduate and graduate students, as well as the *Michigan Corpus of Academic Spoken English*³⁰ (MICASE) and the *British Academic Spoken English corpus*³¹ (BASE), consisting of speech events taking place in different academic settings (e.g. lectures and seminars).

Researchers drawing on corpus methods in EAP have shown a major concern in providing descriptions of academic genres by detecting recurrent linguistic patterns and indentifying their discursive functions. Sequences of words co-occurring together are referred to in different ways in the literature. Some expressions, such as “lexical bundles” (Biber *et al.* 1999, 2004) and “clusters” (Scott 2011), fall into a specific analytical framework whereas others (i.e. n-gram) simply place emphasis on the number of words a specific pattern consists of.

On the basis of a contrastive analysis of written and spoken registers, Biber *et al.* (2004) argue that “lexical bundles” perform three basic functions. They (1) convey the speaker’s stance, (2) work as discourse organizers and (3) are used to refer to entities inside or outside the textual context. Additionally, evidence has been provided that variation in lexical bundles depends not only upon written or spoken registers but also upon the discipline in question (Hyland 2008).

Studies on multi-word expressions in written and spoken academic discourse have placed particular emphasis on the notion of evaluation (e.g. Mauranen 2002; Anderson and Bamford 2004; Hyland/Diani 2009). Defined as “the expression of the speaker’s or writer’s attitude or stance towards, viewpoint on, or feelings about the entities or propositions that he or she is talking about” (Thompson/Hunston 2000: 5), evaluation is thought to perform a pivotal role in the construction of ideology within discourse. This is why it aroused special interest on the part of EAP analysts.

Corpus studies in EAP have also looked at the way instructors make use of specific lexico-grammatical categories in academic contexts to organize discourse as well as to negotiate relationships and present knowledge. This phenomenon is referred

²⁸ Source: <<http://www.coventry.ac.uk/research/research-directory/art-design/british-academic-written-english-corpus-bawe/>> (Last accessed: December 8, 2014)

²⁹ Source: <<http://micusp.elicorpora.info/>> (Last accessed: December 8, 2014)

³⁰ Source: <<http://quod.lib.umich.edu/m/micase/>> (Last accessed: December 8, 2014)

³¹ Source: <<http://www.coventry.ac.uk/research/research-directory/art-design/british-academic-spoken-english-corpus-base/>> (Last accessed: December 8, 2014)

to as “metadiscourse” and is related to “an interesting, and relatively new, approach to conceptualizing interactions between text producers and their texts and between text producers and users” (Hyland 2005: 1). Attention, for example, has been given to: nouns having a “discussive” value (e.g. *point, thing, problem*) (Swales 2001; Bamford 2004); inclusive and exclusive personal pronouns (Rounds 1987a, 1987b; Hyland 2001; Fortanet 2004, 2006; Walsh 2004; Bamford 2009); and epistemic lexical verbs (Hyland 1998; Artiga León 2006). Such categories are salient in that they lie at the intersection between language and context.

Evaluation and metadiscourse are often intertwined and they are both aspects of language use that are relevant to the present study. Some of the above mentioned works are, in fact, taken into account in this study as a starting point for an analysis of TED talks, comparing them to the more traditional genre of university lectures.

As Charles (2013: 140) argues, some corpus approaches have also attracted criticism on the part of some scholars (Swales 2002; Flowerdew 2002), who pointed out the need to go beyond the exploration of mere linguistic chunks or isolated items and look at larger rhetorical patterns within texts (e.g. problem-solution patterns). In this respect, a group of scholars in EAP have drawn on corpus methods to investigate the generic structure of texts and identify their moves (Flowerdew 2008; Flowerdew/Forest 2009; Biber *et al.* 2007).

Despite all the research devoted to the analysis of academic genres so far, Charles (2013: 144) promptly observes that “there are still many that remain unexamined, with spoken genres, in particular, still under-researched” while, she adds, “another area which deserves further attention is that of genre networks (Swales 2004), establishing the intertextual links between genres and the recontextualizations necessitated by a move from one genre to another.” Against this background, the present study casts light on the intertextual relationship between two genres, i.e., TED talks and university lectures, emphasizing the way in which the former lend themselves as a new pragmatic setting wherein academics pursue alternative rhetorical purposes (e.g. identity building and research promotion) to those they attempt to achieve in a classroom.

An important aspect of academic discourse is the fact that it is socially constructed. This is an essential premise for some EAP researchers who investigate the

social dynamics affecting academic writing processes and conventions, with an eye to raising the awareness in learners, students and novices of such dynamics. From this perspective, attention has been paid to the way authors deploy strategies of engagement in their papers to appeal to readers (Hyland 2009b), as well as to issues such as source use and plagiarism (Pecorari 2008), citation (Harwood 2009), PhD topic choice (Hasrati/Street 2009) and genre switching (Street 2010).

One of the main approaches which sheds light on the social dimension of EAP is that of “academic literacies” (ACLITS) (Lea/Street 2006; Street 2010) which, as argued by Street (2010: 349), “views student writing and learning as issues at the level of epistemology and identities rather than skill or socialisation”. More specifically:

An academic literacies approach views the institutions in which academic practices take place as constituted in, and as sites of, discourse and power. It sees the literacy demands of the curriculum as involving a variety of communicative practices, including genres, fields, and disciplines. From the student point of view a dominant feature of academic literacy practices is the requirement to switch practices between one setting and another, to deploy a repertoire of linguistic practices appropriately to each setting, and to handle the social meanings and identities that each evokes. Street (2010: *Ibid.*)

Similarly to ACLITS, critical EAP (CEAP) emphasizes the influence of socio-political contexts on academic practices (Pennycook 1997; Benesh 2001, 2009; Starfield/Ravelli 2006; Casanave 2010), also paying attention to the way such practices change because of the transformative contributions made by students who enter the academy with their own backgrounds.

Finally, as far as the role played by EAP in the wider global context is concerned, special attention has been paid to the use of English as the language of research publication. Emphasis has been placed not only on the role of English as a lingua franca, facilitating exchanges within the international research community, but also on the way the hegemonic role of English affects – most of the time negatively – the participation of scholars who are non-native speakers of English in the international research community (Swales 1997; Tardy 2004). As Charles (2013: 147) points out, research in the sub-field of English for research publication purposes (ERPP), “is of major importance and it would be useful if the concept of ‘publication’ were expanded to include spoken communication” thus focusing, for instance, “on the stages involved

in the delivery of a conference presentation, a seminar or a lecture and on the practices of those involved” – as well as, I would add, on the discursive practices deployed by academics in less conventional contexts (such as that of TED talks) which start to play a fundamental role in the dissemination and promotion of academic research.

It may be observed from this outline, that research in the field of EAP is mainly aimed at assisting practitioners and learners preparing to enter academia. The present study does not share the pedagogical intent of EAP, and yet, previous research in this field was useful for exploring TED talks and detecting some of their distinguishing features. More specifically, research on the genre of university lectures (e.g. Rounds 1987a, 1987b; Hyland 1998; Fortanet 2004, 2006; Artiga León 2006) has provided both a theoretical and an empirical background for an investigation of academic TED talks.

The following subsection revolves around the notion of ‘genre’. An outline is provided of the history of genre theory in order to highlight not only its essential contribution to the development of ESP tradition, but above all to stress how suitable genre theory is for pursuing the aims of the present study.

2.4 Genre theory

According to Hyon (1996), insight into genre theory comes from three different traditions: the International ESP tradition, the Australian Systemic-Functional School and the North American New Rhetoric. The first two traditions are characterized by a text-based approach to genre and place special emphasis on its formal characteristics, whereas New Rhetoric conceives of genre as a dynamic “social action” (Miller 1984: 153), that has a grasp going beyond its form.

John Swales (1990: 58), whose essential contribution to the field of ESP has been previously stressed, describes genre as follows:

A genre comprises a class of *communicative events*, the members of which share some set of *communicative purposes*. These purposes are recognized by the expert members of the *parent discourse community*, and thereby constitute the rationale for the genre. This rationale shapes the schematic structure of the discourse and influences and constrains choice of content and style. [...] In addition to purpose, exemplars of a genre exhibit

various *patterns* of similarity in terms of structure, style, content and intended audience.
[my emphasis]

According to Swales' (1990) conceptualization, a genre is a goal-oriented product strictly dependent upon the notion of "discourse community". Following Herzberg (1986), Swales (1990) defines a discourse community as a social group whose conventions determine a specific language use (or discourse). As a form of social behaviour, language has a pivotal role in a discourse community, it is "a means of maintaining and extending the group's knowledge and of initiating new members into the group". Besides, "discourse is epistemic or constitutive of the group's knowledge." (Herzberg 1986: 1)

In order to help recognize a discourse community, Swales (1990: 24-27) established a set of six characteristics which clearly illustrate the relationship between genres and discourse communities: (1) a discourse community has a broadly agreed set of common public goals (e.g. a Parliament); (2) a discourse community has mechanisms of intercommunication among its members (e.g. meetings, telecommunications, newsletters); (3) a discourse community uses its participatory mechanisms primarily to provide information and feedback (e.g. web forums); (4) a discourse community utilizes and hence possesses one or more genres in the communicative furtherance of its aims; (5) in addition to owning genres, a discourse community has acquired some specific lexis; (6) a discourse community has a threshold level for members, with a suitable degree of relevant content and discursual expertise.

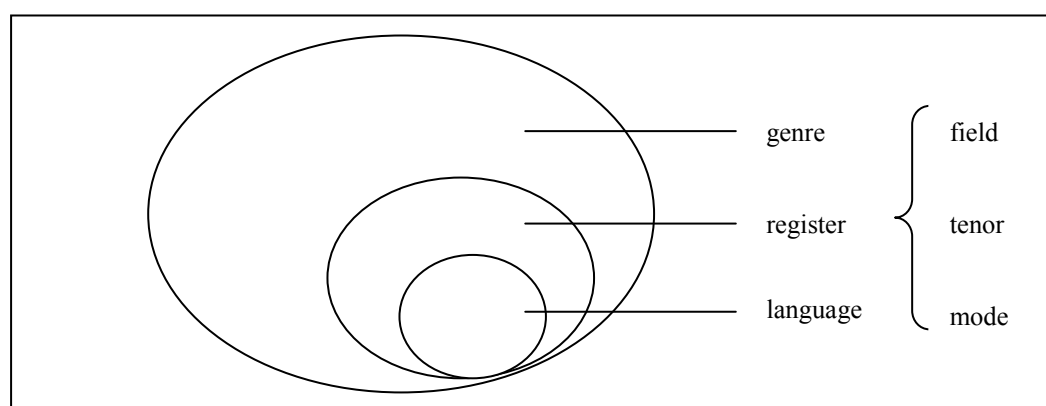
As Bloor (1998: 54) points out, "this approach to language use places [Swales'] work firmly in the tradition of Firthian linguistics". According to her, this is shown, for instance, by the close resemblance between Swales' notion of "communicative event" and Firth's (1957: 144) notion of "speech event":

A speech occurrence or an utterance may be oral or written and is considered as taking place in a context of situation. A *speech event* in a *context of situation* is therefore a technical abstraction from utterances and occurrences. [my emphasis]

The Firthian model had a strong influence on Halliday, too, the major architect of Systemic Functional Linguistics (SFL). As a matter of fact, the notion of "context of

situation” – borrowed by Firth from the anthropologist Malinowski (1923) – played a fundamental role in the development of the concept of “register” on the part of systemicists. Regarded as language “variation according to use” (Halliday/Hasan 1985/1989: 41), register consists of three variables (i.e. “field”, “tenor” and “mode”) referring to discourse content, participants’ relationships and the channel of communication, respectively.

FIGURE 2.1
Language, register and genre (in Martin 2009: 11)



As far as the relationship between genre and register is concerned, SFL theorists (Martin 1985; Couture 1986) have drawn a distinction between these two terms – once regarded as synonymous – arguing that the former is a label referring to a higher-level dimension encompassing and underlying the latter. As Donna Miller (2004) puts it, while genre is linked to the “context of culture” – also borrowed from Malinowski (1935) – imposing constraints at the extra-linguistic level of discourse, register is linked to the context of situation, affecting choices in terms of vocabulary and syntax at the linguistic level (see Figure 2.1 above).

Compared to the well-established notion of register, that of genre has received relatively less attention on the part of SFL theorists. Nevertheless, as pointed out by Swales (1990: 42), contributions from SFL theorists to “the evolving study of genre lie in the emphasis given to: (a) genres as types of goal-directed communicative events; (b) genres as having schematic structures; and most strikingly (c) genres as dissociated from registers or styles.”

Finally, as far as the third perspective on genre presented by Hyon (1996) is concerned (i.e. New Rhetoric), in her seminal work “Genre as social action” Carolyn Miller (1984: 151) argues that “a rhetorically sound definition of genre must be centered not on the substance or the form of discourse but on the action it is used to accomplish”. Besides, according to her, “the understanding of rhetorical genre [...] does not lend itself to taxonomy, for genres change, evolve and decay” (Miller 1984: 163).

Apart from dissociating from those who place emphasis on the importance of the form as well as of any type of taxonomy for genre, Miller’s perspective stands out because of the emphasis placed on the sociological meaning of genres. To use her words:

[...] what we learn when we learn a genre is not just a pattern of forms or even a method of achieving our own ends. We learn, more importantly, what ends we may have: we learn that we may eulogize, apologize, recommend one person to another, instruct customers on behalf of a manufacturer, take on an official role, account for progress in achieving goals. *We learn to understand better the situations in which we find ourselves and the potentials for failure and success in acting together.* As a recurrent, significant action, *a genre embodies an aspect of cultural rationality.* For the critic, genres can serve both as an index to cultural patterns and as tools for exploring the achievements of particular speakers and writers; for the student, genres serve as *keys to understanding how to participate in the actions of a community.* [my emphasis] (Miller 1984: 165)

Miller’s view appears to be quite different from that of ESP and SFL theorists. As Charles (2013: 141) points out, “common to the three approaches, however, is a conception of genres as situated social practices and thus they all share a concern with both the social contexts as well as the linguistic features of genres.”

More importantly, Swales (1990) himself makes explicit reference both to Miller (1984) and the systemicists (Halliday 1978; Martin 1985; Couture 1986), while reviewing all his sources of inspiration in developing his own definition of genre. Additionally, while revisiting the topic, not only did Swales (2009: 5) acknowledge “a mistaken emphasis on genres as distinct independent entities”, he also stressed the constraining role of definitions arguing that:

For one thing they fail to measure up to the Kantian imperative of being true in all possible worlds and all possible times; for another, the easy adoption of definitions can prevent us from seeing newly explored or newly emerging genres for what they are. (Swales 2004: 61)

Against this background, Swales thus decided to provide new insight into the concept of genre by means of a set of six ‘less-rigid’ metaphors: “frames for social action”, “language standards”, “biological species”, “families and prototypes”, “institutions” and “speech acts” (Swales 2004: 68). Swales (2009: 6) traces the first of this metaphors (frames of social action) back to Bazerman (1997) and argues that “this is an inspiring and helpful characterization, this idea of a frame as a starting place or an initial orientation, and indeed is subtly different from Carolyn Miller’s famous 1984 definition centered on the accomplished rhetorical action itself.”

As regards the other metaphors, as Charles (2013: 142-43) observes, “certain of them, such as genre as *language standard* have been foregrounded in the literature, as exemplified by the work of Hyland on disciplinary differences between genres (2005, 2008)” whereas others “such as genre as *biological species* have received less attention.”

Against this backdrop, it thus seems to be hard to draw a clear-cut distinction among these three traditions, as Hyon (1996) does. As pointed out by Swales (2009: 4), “by 2007, what had become known as the genre movement had coalesced somewhat, with the result that the divisions among the three traditions have become much less sharp – even if they have not entirely disappeared.”

At this point, it is worthwhile to pay attention to the contribution of another ESP theorist, Vijay Bhatia, whose main concern was to bring the notion of genre outside the sub-area of EAP and focus on professional discourse. To use his words:

In its early form, genre theory was primarily concerned with the application of genre analysis to develop pedagogical solutions for ESP classrooms. For more than thirty years now it is still considered perhaps the most popular and useful tool to analyse academic and professional genres for ESP applications. Much of the credit for its exceptional achievement goes to the seminal works of Swales (1990 & 2004) and Bhatia (1993) on the development of genre theory to analyse academic and professional genres, with an eye on applications to ESP, especially those used in research, legal, and business contexts. (Bhatia 2012: 19)

Compared to Swales (1990, 2004, 2009) Bhatia's view, in his theorization of genre, is closer to that of New Rhetoric. As he points out:

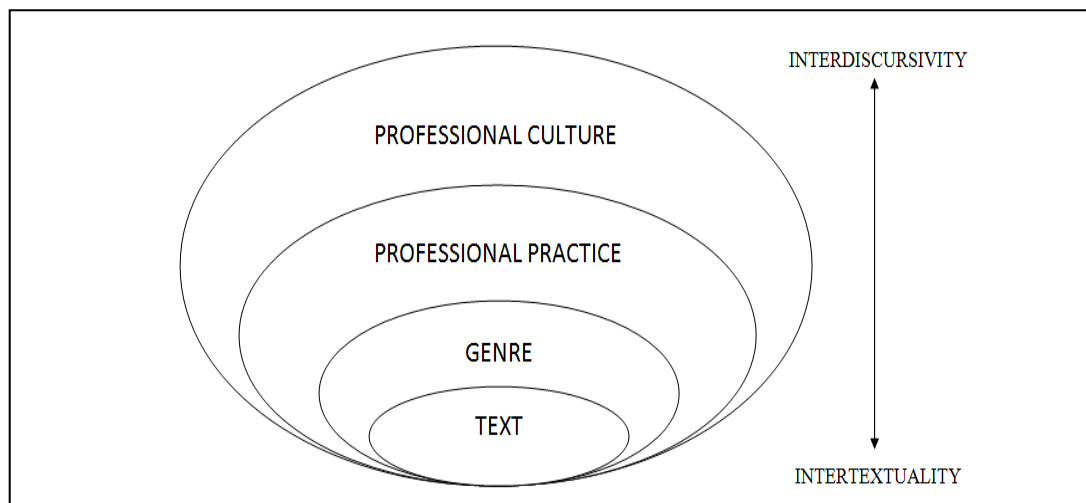
In the early conceptualizations of genre the focus was more centrally on text, and context played a relatively less important background role. However, in more recent versions of genre analysis context has been assigned a more important role, redefining genre as a configuration of text-internal and text-external resources, thus highlighting two kinds of relationships involving texts and contexts. (Bhatia 2007: 391)

Here Bhatia refers to a distinction between “intertextual” and “interdiscursive” relationships among genres and texts. Both intertextuality and interdiscursivity have received much attention from a number of scholars (Kristeva 1980; Foucault 1981; Bakhtin 1986; Fairclough 1992, 1995; Candlin/Maley 1997). According to Bhatia (2007: 392), intertextuality “refers to the use of prior texts transforming the past into the present often in relatively conventionalized and somewhat standardized ways” and is based on appropriations across “text internal resources” (e.g. use of quotations, lexis). On the other hand, interdiscursivity “refers to more innovative attempts to create hybrid or relatively novel constructs by appropriating or exploiting established conventions or resources associated with other genres and practices” (Bhatia 2007: 392). Interdiscursivity is based on appropriations “across three kinds of contextual and other text-external resources: genres, professional practices, and professional cultures” (Bhatia 2012: 24).

By placing emphasis on the notion of “professional practice” and “professional culture”, Bhatia (2012) shifts the focus of genre analysis on what he calls “discursive performance”. From this perspective, language use alone, though being essential, is not considered sufficient to gain insight into the nature of professional practices, while the interpretation of social contexts within which these practices take place is fundamental. Figure 2.2 below provides a schematization of the various levels of analysis established by this new framework.

FIGURE 2.2

Patterns of discourse realization in professional contexts (adapted from Bhatia 2012)



In this new perspective on genre, compared to intertextuality, the notion of interdiscursivity receives a greater amount of attention as it is deemed to play “a more fundamental role in the construction, interpretation, and exploitation of text-external resources at various levels” (Bhatia 2007: 393). This appropriation of generic resources can be illustrated by “various forms of hybrids, such as mixing, embedding and bending of genres” (Bhatia 2012: 25) (see also Bhatia 2004, 2007, 2008, 2010).

This shift in focus in genre theory towards interdiscursivity underlies the theoretical framework of Critical Genre Analysis (CGA). Moving beyond the analyses of semiotic resources used in professional genres, CGA aims at “demystifying professional practice through the medium of genres” as well as at understanding “how professional writers use the language to achieve the objectives of their professions” (Bhatia 2012: 23-24).

Although it overemphasizes the importance of context, Bhatia’s approach still remains language-centered. Nevertheless, unlike early versions of genre analysis focusing on the moves of written academic genres for pedagogical aims, CGA opens up a plethora of new research opportunities, supporting the combination of various perspectives, frameworks and methodologies. This is actually the reason why CGA was deemed fit for pursuing the aims of the present study and for proving that a complex

genre such as that of TED talks can be interpreted as an instance of reconceptualization of academic discourse and, more generally speaking, of social change.

The following section provides an overview of Discourse Analysis, whose theoretical framework is very well suited to the analysis of genres from a wider perspective. DA is closely interrelated with the research areas discussed so far. For this reason, many of its features have already been anticipated in the previous sections.

2.5 Discourse Analysis

Alan Paltridge (2006) traces the expression “Discourse Analysis” back to the American linguist Zellig Harris, who apparently was the first to use it to claim his concern with “continuing descriptive linguistics beyond the limits of a single sentence at a time” while also “correlating ‘culture’ and language” (Harris 1952: 1).

Harris was primarily interested in the distribution of specific lexical features (or “morphemes”) depending upon specific text types and styles and, more importantly, he placed emphasis on the need to investigate the relationship between language and context (or “linguistic and non-linguistic behaviour”). These are still two of the main tenets of Discourse Analysis which, over the course of the last sixty years, has of course increasingly broadened its view. Paltridge (2006: 2) defines DA as follows:

Discourse Analysis focuses on knowledge about language beyond the word, clause, phrase and sentence that is needed for successful communication. It looks at patterns of language across texts and considers the relationship between language and the social and cultural contexts in which it is used. Discourse Analysis also considers the ways that the use of language presents different views of the world and different understandings. It examines how the use of language is influenced by relationships between participants as well as the effects the use of language has upon social identities and relations. It also considers how views of the world, and identities, are constructed through the use of discourse. Discourse Analysis examines both written and spoken texts.

In the first part of this definition Paltridge evidently echoes Harris’ approach to discourse, while in the second, he emphasizes the constitutive role that language has within society. As a matter of fact, scholars carrying out social research have become

more and more aware of this role of discourse and this is what, according to Jaworski and Coupland (2006: 3), determined a “‘linguistic turn’ in social sciences”. As they point out:

Discourse is language use relative to social, political and cultural formations – it is language reflecting social order but also language shaping social order, and shaping individuals’ interaction with society. This is the key factor explaining why so many academic disciplines entertain the notion of discourse with such commitment. Discourse falls squarely within the interests not only of linguists, literary critics, critical theorists and communication scientists, but also of geographers, philosophers, political scientists, sociologists, anthropologists, social psychologists, and many others. (Jaworski/Coupland 2006: 3)

The interest in discourse on the part of scholars from a variety of disciplinary fields caused analytical approaches to discourse to become more and more interdisciplinary from both a theoretical and methodological perspective. This is the main reason why DA was determined to be a suitable theoretical framework to support this study.

Nevertheless, textual analysis is one of the most immediate approaches to analysing discourse. Over the last thirty years different handbooks on Discourse Analysis have been published (e.g. Brown/Yule 1983; Coulthard 1985; Paltridge 2006; Jaworski/Coupland 2006; Paltridge 2006; Hyland/Paltridge 2011; Gee 2011) which stress its empirical nature and provide sets of analytical tools to investigate discourse in all its instantiations – be they written, spoken or visual. In their introduction to *The Discourse Reader*, Jaworski and Coupland (2006: 10-11) sketch out a list of nine “dimensions” to help understand how discourse needs to be intended and approached:

1. The meaning of an event or of a single utterance is only partly accounted for by its formal features (that is, by the ‘direct meaning’ of the words used). The social significance of discourse, if we define it simply as language-in-use, lies in the relationship between linguistic meanings and the wider context (i.e., the social, cultural, economic, demographic and other characteristics of the communicative event) in which interaction takes place.
2. Our interpretation of discourse therefore relates far more to what is done by participants than what is said (or written, or drawn, or pointed at) by them. That is, a functional analysis of language and other semiotic systems lies at the heart of analysing discourse.
3. It is important to distinguish between meanings (including goals and intentions) inferred by observers and meanings (including goals and intentions) inferred by participants. Analysing discourse is often making inferences about inferences.

4. All aspects of meaning-making are acts of construction. Attributing meaning to discursive acts is never a neutral or value-free process.
5. Social categorisation is central to these acts of construction. Our language presents us with many categories that seem 'natural' or 'obvious', although they are very probably so only at a given time and place: they may well be culture-specific or idiosyncratic (favoured by an individual).
6. We can only access discourse through the textual data which we collect by observation, audio or video recording. This means that the texts we analyse are always 'filtered' or 'mediated'; they are in themselves a form of social (re)construction.
7. Linguistic expression itself (as speech or writing) often needs to be interrelated with other physical, temporal and behavioural aspects of the social situation, such as body movement and the synchronisation of actions. Discourse is more than (verbal/vocal) language itself.
8. Close attention to and critical reading of particular instances of language-in-use, linked to other aspects of the social context, is a useful way of discovering the normal and often unwritten assumptions behind communication. Although interpretation will always have elements of subjectivity within it, communication is based on linked, subjective interaction (inter-subjectivity). A more formal approach is likely to miss the creative inter-subjectivity of social interaction. (In saying this we do not deny that language is a structured phenomenon, or deny the importance of this fact. Language and other semiotic systems have recognisable structures and the study of these structures as formal systems constitutes an entirely viable, but different, research programme.)
9. Discourse analysis provides a way of linking up the analysis of local characteristics of communication to the analysis of broader social characteristics. It can let us see how macro-structures are carried through micro-structures.

The roots of DA can be traced back to a variety of traditions and research projects which, to use Fairclough's words (1992: 12) "can be divided into two groups according to the nature of their social orientation to discourse, distinguishing 'non-critical' and 'critical' approaches." Non-critical approaches are considered as inherently descriptive and, unlike critical approaches, do not focus on the role played by discourse in the construction of ideologies and identities.

In the category of non-critical studies on discourse, Fairclough (1992) places research on classroom discourse (Sinclair/Coulthard 1975), on conversation analysis (e.g. Cicourel 1973; Garfinkel 1967, 1974, Sacks/Schegloff/Jefferson 1974), on therapeutic discourse (Labov/Fanshel 1977) and social psychology (Potter/Wheterell 1987; Edwards/Potter 1992). Although to different extents, all these approaches are seen as mainly characterized by "a one-sided individualistic emphasis upon the rhetorical strategies of speakers" (Fairclough 1992: 25), without providing any solid interpretation of the phenomena from a social perspective.

On the other hand, as far as the critical approaches to DA are concerned, Fairclough refers to Critical Linguistics (Fowler *et al.* 1979; Kress/Hodge 1979) as one of the first steps toward contemporary critical studies on discourse. Critical linguistics deliberately rejected two traditional dualisms as held by – at the time – mainstream Chomskyan linguistics, i.e., (1) language systems seen as autonomous from language use and (2) content seen as separate from form.

Apart from research in the field of pragmatics (Austin 1962; Searle 1969, 1979; Grice 1975; Goffman 1959, 1967, 1974, 1981; Brown/Levinson 1987 [1978]; Sperber/Wilson 1986, 1995), Critical Linguistics also took strong inspiration from Hallidayan systemic functional linguistics (Halliday 1973, 1978) (cf. § 2.4 above), paying particular attention to the rhetorical function of specific grammatical forms, such as nominalizations and passive structures. According to Fairclough, critical linguistics presents a series of limitations if compared to contemporary critical approaches to discourse. First of all, it is deemed to focus more on texts as products than on the processes of text construction and interpretation, secondly, it tends to neglect the dynamic nature of “discourse as a dimension of social and cultural change” (Fairclough 1992: 28-29).

Another critical approach to discourse analysis mentioned by Fairclough is that of Pêcheux and his group, who focused on the discourse of French Communist and Socialist parties in the 1970s (Pêcheux 1982), placing emphasis on “the ideological nature of language use” (Fairclough 1992: 30). On the one hand, Fairclough acknowledges the critical value of Pêcheux’s approach as it “marries a Marxist theory of discourse with linguistic methods of text analysis”, on the other, he sees the use of corpora in Pêcheux’s research as a limitation on the investigation of the heterogeneity of “discursive formations”, with texts being conceived of as “evidence for a priori hypotheses” (Fairclough 1992: 33).

As Jaworski and Coupland (2006: 28) point out, behind critical approaches to discourse “there is a wealth of critical theoretic writing” (e.g. Bakhtin 1981; Bordieu 1977, 1984, 1990; Foucault 1972, 1981) of a highly “abstract and philosophical” nature and “which does not always impinge directly on the empirical analysis of discourse.” And yet, these sources laid the foundations of Critical Discourse Analysis, one of the best-known critical approaches in discourse studies. As argued by Hyland and Paltridge

(2011: 38) CDA is “a problem-oriented interdisciplinary research programme” with an “interest in the semiotic dimensions of power, identity politics and political-economic or cultural change in society.” From a methodological perspective:

the CDA research process begins with a research topic that is a social problem; for example, racism, democratic participation, globalization, workplace literacy and so forth. Methodology is the process during which, informed through theory, this topic is further refined so as to construct the objects of research (pinpointing specific foci and research questions). The choice of appropriate methods (data collection and mode of analysis) depends on what one is investigating (Titscher *et al.* 2000). Thus, for example, it is likely that a different set of analytical and theoretical tools will be required to investigate neoliberal ideology in Higher Education, from those needed to explore discriminatory practices in the workplace in a particular organization, or indeed investigating the recontextualization of global practices in national media. (Hyland/Paltridge 2011: 40)

In spite of an overall purpose, CDA subsumes a variety of research trends. Norman Fairclough (1989; 1992; 1995) is the main theorist of the so-called Relational-Dialectic Approach, which looks at the processes of social transformation taking place in and through discourse. From this perspective, as Hyland and Paltridge (2011: 42) observe:

Discursive change is analysed in terms of the creative mixing of discourses and genres in texts, which leads over time to the restructuring of relationships between different discursive practices within and across institutions, and the shifting of boundaries within and between ‘orders of discourse’ (structured sets of discursive practices associated with particular social domains).

Given its patently sociological intent, the present study took strong inspiration from this perspective. TED talks are in fact regarded as a new emerging genre that denotes a reconceptualization of specific professional (and social) practices due to cultural changes in society.

Socio-cognitive studies are another leading trend of CDA. As the main theorist of this approach, Teun van Dijk (e.g. 1991, 1993, 1996, 1997, 2002, 2008a, 2008b) focused, for instance, on the way ethnic prejudices and racist stances are conveyed through discourse on the part of *élite* groups who have a privileged access to the media (e.g. politicians, journalists).

Ruth Wodak (Wodak 2001) is instead the leading theorist of the Discourse-Historical Approach (DHA), an interdisciplinary approach developed to investigate, from both a synchronic and a diachronic perspective, the way in which expressions of social inequality (e.g. sexism, anti-Semitism and racism) are conveyed through public discourse. As Wodak (2011: 44) points out, DHA distinguishes itself from other critical approaches mainly by systematically integrating “all available background information in the analysis and interpretation of the many layers of a written or spoken text”, moving from the “broad socio-political context” to the “textual context of utterances”. A recent account of the way in which DHA operates is provided by a study on the discursive construction of national identity (Wodak *et al.* 2009).

In the field of critical discourse studies, the discursive construction of identity in different social contexts is a central topic (cf. Benwell/Stokoe 2006; De Fina *et al.* 2006). As De Fina *et al.* (2006: 1) observe, the “fundamental role of linguistic processes and strategies in the creation, negotiation and establishment of identities” is currently a tenet not only of Linguistics but also of many other disciplines within the macro domain of the Social Sciences and the Humanities, such as anthropology, psychology, sociology, history, literature, gender studies, and social theory. Among the various approaches to exploring the discursive construction of identity, De Fina *et al.* (2006) draw a distinction between Conversational Analysis (CA) and Critical Discourse Analysis (CDA): while the first approach focuses on the negotiation of identities within “local contexts” via interaction, the second is regarded as placing specific emphasis on the “representation of identities” in political and ideological contexts “much more than on their projection or negotiation in interaction” (De Fina *et al.* 2006: 6).

Finally, getting back to the main trends in critical studies, an important aspect has to do with the systematic deployment of corpus-based approaches to discourse analysis (e.g. Hardt-Mautner 1995; Koller/Mautner 2004; Baker 2005, 2006; McEnery 2006; Baker *et al.* 2008, 2013; Mautner 2009a, 2009b). Baker *et al.* (2008), for instance, illustrate how methods that are closely associated to corpus linguistics can be combined with those used in critical discourse analysis to investigate the way in which refugees, asylum seekers, immigrants and migrants are represented in the British press. In this study, Baker *et al.* (2008: 295) provide a nine-stage model of corpus-assisted analysis whereby it is recommended to researchers that they should alternate qualitative and

quantitative techniques in order to produce and test new hypotheses. A mixed methodology is the main tenet of the so-called Corpus Assisted Discourse Studies (CADS).

In the attempt to understand which kind of communicative purposes academics try to pursue by participating in TED talks, the present study embraces this kind of methodological approach (see Chapter 3). Both quantitative and qualitative methods have been used in order to understand in what ways academics make use of TED talks to achieve their goals and meet, at the same time, the requirements of the TED format. This is in line with what is propounded by Bhatia (2012), who – despite drawing a clear-cut distinction between CDA and CGA – encourages multidisciplinary and multimethodological approaches to analysing discourse and social practices.

2.6 Popularization discourse

One of the first and most relevant contributions to the field of popularization studies is Whitley's (1985) introductory essay to the volume *Expository Science: Forms and Functions of Popularization*. The essay traces a history of popularization and draws a clear distinction between a "traditional" and a "broader" (more recent) view of popularization, explicitly siding with the latter.

Regarded as the "transmission of scientific knowledge from scientists to the lay public for purposes of edification, legitimation and training" (Whitley 1985: 3), in the past, popularization was seen as a subsidiary practice. Dissociated from the 'orthodox' dissemination of findings among experts – popularization was thought to decrease the prestige of producers and for this reason it would be left to non-scientists.

Nowadays, on the contrary, it is commonly believed that "the dissemination of particular results and ideas to non-scientific publics is a more complex phenomenon, involving a variety of actors and audiences, that impinges upon the research process and cannot be totally isolated from it" (Whitley 1985: 3-4).

According to Whitley, popularizations can be analysed on the basis of four basic interrelated dimensions: (1) audience, (2) producers, (3) knowledge and its

transformation and (4) the effect popularizations have on the production and validation of new knowledge.

As far as the audience is concerned, a traditional view of this as being an unorganized and passive ‘mass’ is contrasted with the idea that audiences play a pivotal role in the process of knowledge production and validation. As ‘users’ of this knowledge, in fact, audiences “constitute an important market for scientific ideas, both through providing trainees and students to be educated and through demonstrating the relevance and importance of scientific knowledge in their work” (Whitley 1985: 5).

Against this background, TED talks are an evident ‘up-to-date’ example of how experts actually need to draw on popularizations as an extension of their research activity in order to promote themselves and gain validation for their work not simply in the eyes of the public, but also in the eyes of those who represent public and private institutions that distribute funds.

Knowledge producers, unlike audiences, were traditionally seen as a homogeneous and organized group generating ‘true’ exoteric knowledge that needed to be translated for non-scientists. And yet, as Whitley (1985) observes, the increasing development of differentiated research fields – TED talks are a case in point of such heterogeneity – poses a challenge for scientists who need to communicate and interact with colleagues who belong to other research groups in order to achieve credit and gain cooperation.

With regards to the third aspect, i.e., knowledge and its transformation, a contradiction can be perceived, according to Whitley, in the way scientific knowledge was traditionally seen as something which essentially, despite superficial changes, remains the same even when transferred to non-scientists:

If, in fact, knowledge was produced by cohesive, autonomous communities governed by their own paradigms then it is difficult to see how its communication to other audiences could fail to alter its nature since the meaning of research results would be determined by the paradigm that generated them. If Wittgensteinian “forms of life” govern the use of concepts and rules determining correct descriptions of social actions in particular scientific communities then the transformation of knowledge produced by one community into the language and concepts of another is very difficult, if not impossible, without seriously changing the nature of that knowledge. (Whitley 1985: 7)

With reference to Fleck (1979) and Latour (1980), Whitley (1985: *ibid.*) argues that “any communication of knowledge claims involves some redescription which subtly alters them so that the popularization of true knowledge to a wide audience always results in alterations to it”. Such alterations, I would add, are very often due to a shift within popularizations from communicative to more strategic purposes. TED talks are an example of this. Besides conveying knowledge, academics delivering TED talks, for instance, show a strong interest in building up discursively their identity as experts as well as in promoting their research.

Finally, as regards the effect popularizations have on the production and validation of new knowledge, Whitley (1985) argues against the traditional belief that popularizations do not affect scientific research. In support of his argument, he emphasizes the role of popularization in obtaining access to external funds and resources for carrying out research as well as in establishing direct contact with an increasing number of non-specialists who are “directly involved in the determination of research strategies, of topics to be pursued and of approaches to be followed” (Whitley 1985: 9). Hence, popularization is thought to have “a direct impact upon what research is done, how it is done and how it is interpreted” (Whitley *ibid.*). TED is a fitting example of this. While stressing the heterogeneity of science and its fields by means of its wide-ranging roster of experts, on the other hand, the TED format also shows how technology, for instance, is a privileged (research) topic in today’s society (cf. Chapter 1, § 1.2).

Despite dating back almost thirty years, the sociological analysis offered by Whitley is extremely lucid, detailed (he also offers a series of parameters to categorize different types of popularization) and so forward-looking that it laid the foundations for all the scholars who followed him in attempting to provide further insight in the study of popularization.

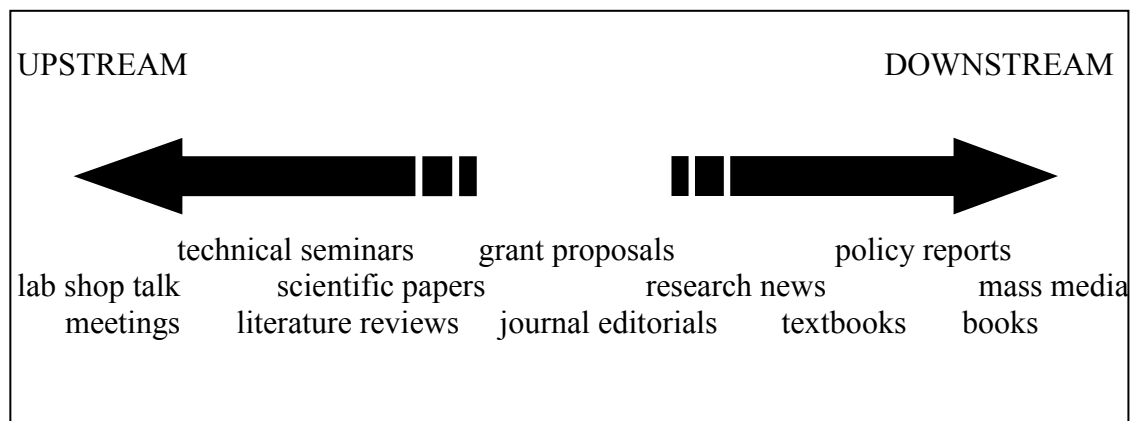
In another seminal article on the topic, Stephen Hilgartner (1990), an historian and philosopher of science, brings a series of interesting aspects to the fore. He focuses on a traditional and oversimplified “dominant” view according to which popularization must be regarded as either “appropriate simplification” or “distortion” of scientific knowledge.

First of all, as Hilgartner observes, a clear-cut distinction between ‘good’ or ‘bad’ simplifications seems to serve “scientists (and others who derive their authority from science) as a political resource in public discourse” and grant them “broad authority to determine which simplifications are ‘appropriate’ (and therefore usable) and which are distortions (and therefore useless – or worse!)” (Hilgartner 1990: 520).

Hilgartner argues against this categorical separation between negative and positive simplifications to place emphasis – as Whitley had already done – on the scalar nature of popularization. To explain his idea that “popularization is a matter of degree” (Hilgartner 1990: 528), he draws on the image of a spectrum, where he places a series of different genres that occupy different positions along the gradient (see Figure 2.3 below).

FIGURE 2.3

Contexts in which Scientific Knowledge is communicated (adapted from Hilgartner 1990: 528)



In order to distinguish popularizations from instances of ‘pure’ science, Hilgartner (1990: 525) suggests a series of “strategies”. Firstly, one should look at the “communication context in which knowledge is presented”. Secondly, attention should be paid to “the content” and “the nature of the claims” (“degree of formalization” and “technical precision” in Whitley (1985)) and then, finally, it would be of help “identifying the ‘original’ knowledge and strictly distinguishing between its creation and its spread.”

The idea that popularization is a scalar notion is probably the most useful feature highlighted by Hilgartner (1990) – to me this is a key aspect for grasping the complexity of this phenomenon.

Given these premises, the fact that popularization has increasingly aroused the interest of discourse analysts should not be surprising. In 2003 a special issue of the journal *Discourse Studies* was devoted to the discourse of popularization. In her introduction to the issue, Helena Calsamiglia (2003: 141) acknowledged popularization as “a new area for discourse research and enquiry”, pointing out that:

Perhaps one of the most interesting theoretical issues that popular science writing raises for discourse studies is the description of the process and putting into practice of *the recontextualization of scientific knowledge*, which owing to its relative ‘strangeness’, runs the risk of deviation and utilization for other ends. Each instance of popular science communication – whatever the level, and regardless of the interlocutors – is exposed to the same kind of tensions and conflicts of interests as other social phenomena. Thus, it is of vital importance for research into popular science writing practices to be aware of the different dimensions of the *change of context*.

Calsamiglia (2003) also places emphasis on the need to focus on the interpretation of the different contexts in which practices of knowledge dissemination take place when analysing popularization (cf. Calsamiglia/van Dijk 2004). In so doing, what can be inferred is that popularizations are more often than not instruments for experts to achieve their private goals. From this critical perspective, as Hilgartner (1990: 531) points out:

[...] a mountain of evidence shows that experts often simplify science with an eye toward persuading their audience to support their goals: whether they seek to motivate people to follow public health recommendations, build support for research programmes, convince investors that a finding shows commercial promise, or advocate positions in science-intensive policy controversies.

Against this background, TED talks lend themselves as a relevant example of how experts – in this case, academics – draw on popularization in order to achieve purposes

(e.g. build up their image as professionals and promote their research) other than that of merely informing their audience of scientific content.

In the above-mentioned issue of *Discourse Studies*, in line with Hilgartner, Greg Myers (2003) also questions a “dominant view” of popularization and its focus on a strict dichotomy between ‘scientific’ and ‘popular’ texts. In an attempt to provide analysts with some valuable advice on how to approach popularization from a discourse perspective, Myers (2003: 271) argues as follows:

Textual analysts, like practising scientific writers, need to be prepared for hybridity. So any claim one makes about the use of references, or the hedging, or the illustrations, needs to relate back to what this particular text is doing here, not to assumptions about what texts like this in general must do, and not to broad distinctions between real science and some imitation.

In line with this observation, the present study looks at academic TED talks as instances of discourse hybridity – rather than just simplified versions of scientific knowledge – since they combine informative purposes with promotional ones. From this perspective, the discursive study of popularization can help gauge social change and track the evolution of professional genres and practices.

Also in an attempt to provide advice on how discourse analysts should approach the study of popularization, Myers (2003) recommends that scholars should refrain from focusing their attention on written texts only, in that, as he points out:

First, some of the most dramatic and memorable encounters with science are primarily visual, rather than verbal [...]. Second, a focus on words ignores changes that are occurring in even the more traditional genres, such as textbooks, as new production technologies enable them to use more pictures and more complex layouts (Bastide 1991; Lemke 1998; Miller 1998; Veel 1998). Third, it limits the places we look for popularization, so we may tend to ignore classrooms (Ogburn *et al.* 1996; Kress *et al.* 2001), or science museums (Bud 1988; Durant 1992; Macdonald 1996), as well as television, films and ads. (Myers 2003: 272)

TED talks are a patent example of this. By combining different semiotic modes, TED talks require, in fact, a multi-level and multimodal analysis, leaving room for a variety of approaches and methodologies.

Another important aspect that has to be taken into account while investigating popularizations is the interaction between producer and receiver. As Myers (2003: 273) argues:

In any case regardless of which scientific authority is at issue, the interaction is not a simple matter of the public examining the credentials of the expert to see if he or she is qualified to speak on a topic; it involves the active construction of believable or discreditable identities, and alignments that might shift in the course of one interaction (Hinchliffe, 1996; Hamilton, 1998; Myers and Macnaghten, 1998; Myers, forthcoming). The failure of scientists to recognize these interactions, and the subtlety and complexity that discourse researchers have shown in them, may account for some of their exasperation when their messages (on the need for a supercollider, the applications of sociobiology, or the risks of nuclear power) do not have the desired effect.

The present research shows how TED talks work as a new setting wherein academics build up and negotiate their identities as experts. This is seen as one aspect which allows us to understand how a popularizing practice, such as that of speaking on the TED stage as ‘an academic who carries out research and makes discoveries’ (cf. Chapter 4), differentiates itself from speaking in front of an audience of novices in a university classroom.

From an empirical perspective, previous work on popularization discourse has focused on the way experts simplify, organize and illustrate specialized content discursively. Attention has been paid to the way content and claims are distributed in the text (Nwogu 1991; Hyland 2010), to strategies of formulation and reformulation (used for instance by doctors and scientists to address patients and mediators during face-to-face interactions) (Gülich 2003; Ciapuscio 2003), as well as to the use of definitions and descriptions when disseminating knowledge about the human genome, such as in the press (Calsamiglia/van Dijk 2004). Attention has been also paid to shifts between self- (as experts) and other- (as non-experts) presentation during doctor-patient exchanges (e.g. *we doctors*; the audience addressed as *patients*) (Gülich 2003) as well as

to the way, in some specific cases, scientific voices are referred to by the press (e.g. the ‘mad cow’ disease case) (Calsamiglia/López Ferrero 2003).

In her introduction to the volume *The Language of Popularization: Theoretical and Descriptive Models*, Caliendo (2012a) illustrates the most recent approaches to the discursive analysis of popularization, which range from corpus linguistics, text grammar and text linguistics to rhetoric and pragmatics, also including genre analysis and critical discourse analysis. As she argues, some scholars have made use of contrastive analyses to understand to what extent popularizations and original sources differ from each other in terms of readability, explanation and evaluation as well as of discourse organization and re-elaboration (Bamford 2014; Bondi 2014; Garzone 2014). Attention has also been paid to the way communication technologies influence contemporary practices of knowledge dissemination (Caliendo 2012b; Samson 2012) as well as to the way institutions draw on popularizations to inform users of health or legal issues (Maci 2012; Polese/D’Avanzo 2012). Moreover, emphasis has been placed on the role played by popularization in the construction of professional identities (e.g. environmentalists and academics) (Compagnone 2014; Caliendo/Compagnone 2014).

However, though raising the interest of many researchers in the last thirty years, popularization still remains a partly unexplored territory (Calsamiglia 2003; Myers 2003; Garzone 2006; Caliendo 2012a). This section was aimed at illustrating the complexity of this phenomenon, where analysis needs to be carried out by drawing on an interdisciplinary “integrated approach” (Gotti 2013: 28). As Garzone (2006: 101) points out:

The way a unit or piece of knowledge is selected, re-contextualized and transformed to be made accessible to non-experts is an extremely rich topic of research, as is the comparative analysis of the linguistic and cognitive structures of ‘technical’ genres and of those addressed to the layman; research in this area has now only started and is very promising. But the new frontier is the study of the encroachment of specialized language and discursive practices on non-specialized registers, the reasons and modes of the embedding of scientific vocabulary and notions in genres which are not based on scientific knowledge, the way scientific knowledge is dealt with in these contexts and the strategies – if any – deployed to make it accessible to the general public in such ‘displaced’ contexts.

Against this background, as a clear example of what can be perceived as a more and more blurred boundary between specialized and non-specialized discourse, TED talks pose a great challenge for those who attempt to provide deeper insight into the discourse of popularization.

2.7 State of the art advancements

In the previous sections an overview has been provided of the main research areas that this study draws on. First of all, a discussion has been given of research in the field of ESP (section 2.2), with a special focus on the sub-area of EAP (section 2.3). Attention has then been turned to genre theory (section 2.4) and to the field of discourse analysis (section 2.5), with a focus on both descriptive and critical trends. Finally an overview of studies on popularization discourse has been provided (section 2.6) in order to contextualize the research scope of this project.

With reference to the achievement of theoretical advancements in a specific research field, Corley and Gioia (2011: 15) state that “the idea of [theoretical] contribution rests largely on the ability to provide *original insight* into a phenomenon by advancing knowledge in a way that is deemed to have *utility* or usefulness for some purpose”. Whereas “originality can be categorized as either (1) advancing understanding incrementally or (2) advancing understanding in a way that provides some form of revelation”, on the other hand, “the utility dimension parses into (1) practically useful and (2) scientifically useful.

In the light of the above, as far as its relationship with ESP tradition is concerned, the present study makes ‘unconventional’ use of research in the field, since any reference to pedagogic application of ESP is disregarded. Studies in the field of EAP (e.g. Rounds 1987a, 1987b; Hyland 1998; Fortanet 2004, 2006; Artiga León 2006; Hyland 2009a, 2009b) are, in fact, used as a starting point to investigate the reconceptualization of academic discourse – from the university classroom to the TED stage – from a discursive and sociological perspective. It is against this backdrop that the present study attempts to enlarge the scope of ESP research by focusing the attention on to a new unconventional pragmatic setting (i.e. that of TED), in an attempt

to trace and track the evolution and transformations of academic discourse outside traditional contexts (e.g. the university classroom) in a revelatory manner.

For this purpose, the present study moves on from the more traditional versions of genre analysis (Swales 1990, 2004; Bhatia 1993, 2004) to the most recent approach of Critical Genre Analysis (CGA) (Bhatia 2007, 2008, 2010, 2012), in an attempt to analyse the interdiscursive nature of TED talks, a relatively new popularizing genre which has only recently started to stimulate interest among discourse analysts (Caliendo 2012b; Caliendo/Compagnone 2014; Compagnone 2014; Scotto di Carlo 2014).

The theoretical approach of CGA results from a shift in focus in genre theory from “pedagogic applications to ESP” on to the investigation of “the world of professions” (Bhatia 2012) (cf. § 2.2). Against this background, the present study attempts to contribute to the development of critical genre theory by placing emphasis on an instance of academic discourse seen, for the first time, as an example of “professional practice” and “(inter)discursive performance” (Bhatia 2008, 2010, 2012). In other words, consideration is given to the way in which academics make use of language to achieve their “private objectives” (Bhatia 2012) rather than training novices in a specific discipline or informing mass audiences. In so doing, the present study aims to enlarge the research scope of CGA, which has so far mainly centered on the investigation of professional discursive performance in legal contexts (e.g. Bhatia/Candlin/Engberg 2008; Bhatia/Candlin/Evangelisti 2009; Bhatia/Candlin/Gotti 2010, 2012; Bhatia/Garzone/Degano 2012).

To pursue this aim, as well as in an attempt to operationalize the theoretical approach offered by CGA, theories and methods have also been borrowed from the research field of Discourse Analysis, ranging from pragmatics (e.g. Grundy 2008; Birner 2013) to corpus-assisted discourse studies (e.g. Baker *et al.* 2008). In this respect, the present study aims to show how corpus linguistic analysis is useful for inquiring into genres and their situational backgrounds. Moreover, apart from focusing on linguistic elements (i.e. personal pronouns and epistemic lexical verbs) which have already been looked at in studies on the genre of university lectures (e.g. Rounds 1987a, 1987b; Fortanet 2004, 2006; Artiga León 2006), the present research also integrates genre analysis with studies on lexical aspect (or *Aktionsart*) (Vendler 1957 [1967]; Van

Valin/LaPolla 1997; Croft 2012) (cf. Chapter 3), which is most definitely innovative from a methodological perspective.

Finally, as far as contributions to the study of popularization are concerned, by shedding light on TED talks as a new and widespread instance of knowledge dissemination, the present study attempts to show that popularization is not just “writing [or speaking] that makes new or complex research and ideas accessible to nonspecialists” (Luey 2010: 5) but a more complex phenomenon, involving processes of identity construction as well as of reconceptualization of professional practices and social change.

Chapter 3 – Corpus and methods

3.1 Chapter overview

In this chapter a description of the corpus is provided as well as of the methodology followed to collect and analyse the data. Specifically, in section 3.2 attention is paid to the design and description of the corpus. In section 3.3 the focus is on the methods employed to analyse the data according to the objectives of the present research.

3.2 Corpus

To pursue the aims of this study, a reference corpus was collected consisting of 1,084 transcribed TED talks delivered both by experts and non-experts, either native or non-native speakers of English (hereinafter referred to as TED_ref)³². The TED_ref corpus totals more than 2.5 million tokens and was compiled on the basis of an archive³³ available on the official TED website – which is constantly updated as new talks are added. TED_ref spans a period of ten years (2002-2012) and covers five macro subject areas: Arts and Design, Business, Culture and Education, Politics and Global Issues, Science and Technology (see Table 3.1 below).

³²The TED_ref corpus was collected in collaboration with other members of a research group from the University of Naples, ‘Federico II’, Department of Humanities, and the University of Naples, ‘L’Orientale’. The research group was headed by Giancarmine Bongo and Giuditta Caliendo and consisted of the following members: Julia Bamford, Antonio Compagnone, Stefania D’Avanzo, Adriano Laudisio, Margaret Rasulo and Giuseppina Scotto di Carlo.

³³Source: <<https://docs.google.com/spreadsheet/ccc?key=0AsKzpC8gYBmTcGpHbFiILThBSzhmZkRhNm8yYllsWGc&hl=e%20%20n#gid=0>> (Last accessed: December 8, 2014).

TABLE 3.1
TED_ref corpus

field	talks	tokens
Arts and Design	287	603,095
Business	107	254,958
Culture and Education	220	522,936
Politics and Global issues	221	528,591
Science and Technology	249	599,237
TOTAL	1,084	2,508,817

TED talk transcriptions were retrieved from the TED website. Each transcript was saved in .txt format so as to obtain a corpus which could be read by computer software for corpus analysis. In order to favor the trackability of data, transcriptions were saved and categorized under a series of abbreviations that allowed us to distinguish each TED talk according to (a) the topic dealt with, (b) the year in which it was filmed as well as (c) the type of speaker. TED speakers were divided into two macro categories: experts (EX) and non-experts (LAY). The first macro category was divided into eight sub-categories: doctors (dc), academics (ac), professionals (pr), politicians (pol), artists (art), literary men/women (lit) and religious men/women (rel). The second macro category was divided into two sub-categories: celebrities (vip) and ordinary people (op). Apart from the abbreviations used to name and save the files, no corpus annotation (i.e. part-of-speech tagging or mark up) was adopted. Although its usefulness and widespread use in corpus-based studies is acknowledged, corpus annotation was not believed necessary for the purposes of this research.

The present study aimed at exploring the way in which academics make use of TED talks in order to achieve their communicative purposes. To this end, from TED_ref a sub-corpus of 207 transcribed TED talks was drawn up. All the talks in this sub-corpus (hereinafter referred to as TED_ac) were delivered by academics who are either native speakers of American English or have received their education in the US. The TED_ac corpus totals 552,345 tokens and spans a period of ten years (2002-2012). Speakers in the TED_ac corpus come from universities, colleges and/or research institutes. Information about speakers was retrieved both from their TED speaker personal profiles available on the TED website as well as from the speakers' personal or

institutional web pages. It was not always possible to establish whether speakers had teaching assignments as well as doing research.

TABLE 3.2
TED_ac and MICASE_lect corpora

corpora	speech events	tokens	time span
TED_ac	207	552,345	2002-2012
MICASE_lect	35	348,005	1998-2001

In an attempt to detect some distinguishing features of academic TED talks, a contrastive analysis was carried out, comparing TED_ac to a corpus of 35 university lectures totalling 348,005 tokens (hereinafter referred to as MICASE_lect). The MICASE_lect corpus was drawn from the *Michigan Corpus of Academic Spoken English* (MICASE), a spoken-language corpus of 1.8 million tokens freely available on-line³⁴, which consists of different academic speech events (e.g. lectures, colloquia, dissertation defenses, discussion sessions, etc.) recorded at the University of Michigan at Ann Arbor. Both MICASE and MICASE_lect cover a time span of four years (1998-2001).

The difference in time spans between TED_ac and MICASE_lect (ten years for TED as opposed to four years for MICASE) is solely due to the availability of research materials and is not part of my research design. To the best of my knowledge, MICASE is, in fact, the only spoken corpus of academic American English available on-line.

Speakers in the MICASE_lect corpus differ from those in the TED_ac corpus. Investigating the way the same speaker performs in the two contexts under scrutiny would have undoubtedly offered a deep insight into the study of popularization as a phenomenon of ‘recontextualization’. Unfortunately, it was not possible to retrieve the transcripts of the lectures TED speakers delivered at their home institutions. Nevertheless, a contrastive analysis of MICASE university lectures and TED talks was still thought to be useful to highlight some of the distinguishing features of TED as a new genre and to place emphasis on a process of ‘reconceptualization’ of academic discourse via the Web.

³⁴ Source: <<http://quod.lib.umich.edu/m/micase/>> (Last accessed: December 8, 2014)

The number of speakers in the two corpora is also different (207 speakers for TED as opposed to 35 speakers for MICASE). However, by way of compensation, the two corpora share almost the same number of tokens, in that MICASE lectures are, on average, longer than TED talks.

TABLE 3.3
MICASE_lect and TED_ac sub-corpora

	MICASE_lect		TED_ac	
	'hard' disciplines	'soft' disciplines	'hard' disciplines	'soft' discipline
speech events	18	17	125	82
tokens	167,680	180,325	332,224	220,121

TED talks are monologic speech events. For this reason, in order to increase the comparability between the two corpora, the MICASE lectures were collected according to the attributes “highly monologic” and “mostly monologic”. This was made possible thanks to the MICASE interface³⁵, which allows us to select speech events on the basis of different contextual attributes (e.g. event type, speaker’s role, interactivity rating). Besides, the transcripts of the MICASE lectures have been cleansed of all the parts that did not pertain to the instructor (e.g. questions from the students).

On the basis of four macro subject areas established by the authors of MICASE, both the TED_ac and MICASE_lect corpora have been subdivided into two sub-categories (see Table 3.3 above), separating the ‘hard’ disciplines from the ‘soft’ ones. This was considered necessary in order to understand to what extent changes in discourse in the two genres are contingent on the type of discipline the speaker deals with.

³⁵ Source: <<http://quod.lib.umich.edu/cgi/c/corpus/corpus?c=micase;page=simple>> (Last accessed January 24, 2014)

TABLE 3.4
Disciplinary categories in MICASE_lect and
TED_ac

Disciplines	
‘Hard’ science category	
Biological and Health Sciences	Biology, Biochemistry, Dentistry, Genetics, Immunology, Natural Resources, Neuroscience, Nursing, Pathology, Pharmacy, Physiology, Public Health
Physical Sciences and Engineering	Astronomy, Chemistry, Computer Science, Engineering (all), Geology, Mathematics, Physics, Statistics, Technical Communication
‘Soft’ science category	
Social Sciences and Education	Anthropology, Business Administration, Communication, Economics, Education, History, Public Policy, Political Science, Psychology, Social Work, Sociology, Urban and Regional Planning
Humanities and Arts	Area Studies (all), Architecture, Classics, Comparative Literature, English, Fine Arts (all), Foreign Languages, History of Art, Information and Library Science, Linguistics, Philosophy, Women’s Studies

As shown in Table 3.4 above, each one of the four macro subject areas consists of a series of sub-disciplines. These are equally distributed in both MICASE_lect and TED_ac.

3.3 Aims and methodology

The overall aim of this study was to show that, in specific contexts, popularization is a discursive practice which goes beyond the mere attempt on the part of experts to simplify and convey knowledge to mass audiences for informative purposes. To pursue this aim, close attention was given to the web-mediated genre of TED talks, with a specific focus on the way in which academics draw on this format to achieve their professional objectives.

TED is aimed at a multiple audience: it is both (a) a live communicative event, where a speaker addresses a group of co-present participants, and (b) a recorded speech event, embedded and recontextualized in the framework of a website accessible by users worldwide. TED talks (and the TED website) combine different semiotic modes (i.e. spoken, written, audio and video) and can be explored from different perspectives.

However, for the purposes of this study, I adopted a corpus-based approach and focused mainly on the verbal content of TED talks in order to explore the way in which academic discourse is reconceptualized through this popularizing genre. More precisely, the present study rests on the assumption that TED talks are a new pragmatic setting within which academics attempt to pursue communicative purposes other than merely communicating knowledge³⁶. Against this backdrop, the following research question arose:

- (1) Which communicative purposes do academics attempt to achieve by participating in TED talks?

In the framework of today's knowledge-based economy, academics are required to persuade both the lay public and fund providers of the quality and applicability of their research and ideas. To do so, while communicating knowledge to non-experts through popularizations, academics have to present themselves and be seen as reliable sources of information. On the basis of these premises, two more specific research questions were established to explore academic TED talks:

- (2) How do academic TED speakers discursively present themselves on the TED stage?
- (3) How do they present knowledge and describe states of affairs for their communicative purposes while adhering to the conventions of the genre in question?

³⁶ This hypothesis was formulated on the basis of a pilot case study (Compagnone 2014) focusing on the way in which environmental discourse is contextualized in the framework of Alex Steffen's TED talk "The Route to a Sustainable Future" (2007). In this study evidence is provided that, besides disseminating knowledge about environmental issues, the speaker also attempts to build up his 'professional' image as an environmentalist as well as to promote his and his group's agenda.

From a wider perspective, the above research questions arise from the belief that (a) popularization is a professional practice which is contingent upon the norms and conventions of a “professional culture” (Bhatia 2012) and that (b) the discursive analysis of a popularizing genre such as that of TED talks allows us to make inferences about this socio-cultural system.

To address (1), (2) and (3), a contrastive analysis was carried out by comparing TED to the genre of the university lecture (cf. section 3.2). Although university lectures share a series of common features with TED talks, they differ from the latter by their inherent pedagogical purpose. With this in mind, a comparison between the two genres was considered suitable for dealing with (1), and as a consequence previous research on the genre of the university lecture was used as a starting point to discover some distinguishing features of academic TED talks. More specifically, with reference to (2), particular attention was paid to research on the use of first and second person pronouns in the genre of the university lecture (Rounds 1987a, 1987b; Fortanet 2004, 2006). As regards (3), special emphasis was placed on the category of epistemic lexical verbs (ELVs) (Chafe 1985; Hyland 1998; Biber *et al.* 1999) and their use in the context of the university classroom (Artiga León 2006). Finally, with reference to both (2) and (3), consideration was also given to the notion of “lexical aspect” or *Aktionsart* (Vendler 1957 [1967]; Van Valin/LaPolla 1997; Croft 2012).

The choice to focus on personal pronouns is due to their fundamental function in the representation of roles within discourse (Pennycook 1994; Rounds 1987a; De Fina *et al.* 2006). Attention was paid to the category of ELVs because they are among the most common linguistic items through which speakers convey their “epistemic stance” (Conrad/Biber 2000), commenting on the degree of reliability of the source of the information provided. Finally, consideration was given to the broader notion of *Aktionsart* (Vendler 1957 [1967]; Van Valin/LaPolla 1997; Croft 2012), as this appeared useful for undertaking further exploration of the use of the pronoun *we* on the part of academics to present themselves and depict “states of affairs” (Van Valin/LaPolla 1997) in the two contexts under scrutiny on the basis of the speaker’s communicative purposes and the conventions of the genre s/he draws on.

To pursue the aims of this study, both quantitative and qualitative searches were carried out by making use of computer software AntConc 3.4.1 (Anthony, 2014) and

WordSmith Tools 5.0 (Scott 2011) to obtain and compare word lists, concord lists and keywords lists from the corpora under investigation.

As far as the use of personal pronouns is concerned, first of all, a quantitative search was carried out by looking at the frequencies and distribution of first and second person pronouns in MICASE_lect and TED_ac. Third person pronouns were discarded from my search in that, as Fortanet (2004: 51) aptly points out, they rarely refer to the speaker or the hearer. Particular attention was paid to the pronoun *we* – significantly more frequent in TED_ac than in MICASE_lect – looking at its referents and discourse functions in the two corpora. In order to explore the discourse functions of the pronoun *we* in TED_ac and MICASE_lect it was necessary to carry out a qualitative analysis. A close and careful reading of both lectures and TED talks was needed to identify the various referents of the pronoun *we* and establish its discourse functions within the context. Distribution, referents and discourse functions of the pronoun *we* in MICASE_lect and TED_ac were also explored by separating ‘hard’ from ‘soft’ disciplines.

With reference to epistemic verbs, three different classifications of ELVs were adopted (Chafe 1986; Hyland 1998; Artiga León 2006) and combined together to draw up the following selection of thirty-nine ELVs that were searched for in the two corpora under investigation in order to detect differences in their use and distribution in university lectures and TED talks: *admit, appear, argue, assume, attempt, believe, calculate, claim, conclude, consider, doubt, estimate, exhibit, feel, figure, guess, hear, imagine, imply, indicate, infer, judge, know, look like, note, notice, predict, propose, report, see, seek, seem, show, sound, speculate, suggest, suppose, suspect, think*.

Firstly, attention has been paid to the frequencies of ELVs in order to compare their distribution in the two corpora. Secondly, special attention was given to the four most frequent ELVs (*know, see, show, think*), which significantly outnumbered the other verbs of the list in both corpora. Thirdly, the co-occurrences of the four most frequent ELVs with first and second person pronouns were examined, to detect any significant difference in the use of pronoun reference when comparing the two corpora. Finally, drawing on concord lists, the clusters of the four ELVs under scrutiny were analysed, in order to highlight their pragmatic functions in the two corpora. The clusters

of the four ELVs under scrutiny were also analysed by taking into account the distinction between ‘hard’ and ‘soft’ sciences.

As far as lexical aspect (or *Aktionsart*) is concerned, this notion allowed further exploration of the use of the pronoun *we* in MICASE and TED. More precisely, consideration was given to all the verb collocates of the pronoun *we* to explore whether, and to what extent, their distribution changes between the two settings under investigation according to their lexical properties as well as in relation to the discourse functions of *we*. To this end, first of all, a quantitative search was carried out of all the verbs co-occurring with *we* in MICASE_lect and TED_ac (except for *be*, *do* and *have* when used as auxiliaries, the semi-modals *be to* and *have to* and the modals *can*, *could*, *may*, *might*, *will*, *would*, *shall*, *should*) in a +4 span (e.g., *we think*, *we don’t think*, *we have always thought*, *we would have never thought*). Secondly, all the verb collocates of *we* in the two corpora were sorted on the basis of the four lexical aspectual categories (i.e. states, activities, accomplishments and achievements) found in the literature on *Aktionsart* (Vendler 1957 [1967]; Van Valin/LaPolla 1997; Croft 2012). Finally, a qualitative analysis was carried out to investigate the discursive functions of some of the most frequent and salient verbs – sorted on the basis of the above-mentioned four lexical aspectual categories – used by academics in combination with the pronoun *we* to achieve their communicative purposes.

The present study draws on a mixed methodology, i.e., it combines quantitative and qualitative approaches. In this regard, claims based on statistical evidence also leave space for more qualitative observations in order to safeguard the importance and salience of the situational context.

Chapter 4–Results and discussion

4.1 Chapter overview

In this chapter an account of the results obtained by comparing two corpora of academic spoken discourse, i.e., TED_ac and MICASE_lect, will be provided. In section 4.2 attention is paid to the way academics draw on TED talks, as opposed to university lectures, in order to build up discursively their identity as experts and express their belonging to a scientific community. In section 4.3 consideration is given to the way academics present knowledge and express their “epistemic stance” (Conrad/Biber 2000), commenting on the degree of reliability of the information conveyed. In section 4.4 attention is instead given to the way academics represent themselves and “states of affairs” (Van Valin/LaPolla 1997) in the two settings under scrutiny.

4.2 Building expert identity in TED

TED is a format with its own set of fixed rules and conventions. Nevertheless, the delivery style of TED talks is also contingent upon a heterogeneous line-up of speakers. TED gathers, in fact, different types of expert (e.g. scientists, doctors, literary man and women, politicians, academics) from different professional fields (e.g. science, business, arts and design, education).

For the sake of a systematic approach, it was therefore of interest to focus on the way in which a specific professional category, i.e., that of academics, makes use of TED. More precisely, one of the main objectives of this study is to understand which communicative purposes academics attempt to achieve when they deliver a TED talk.

Academic discourse has a pivotal role in the processes of knowledge creation, legitimation and dissemination within society. As Hyland (2009: 2) observes:

[...] beyond the university, the languages of the academy have quietly begun to insert themselves into every cranny of our lives in the West, colonizing the discourses of technocracy, bureaucracy, entertainment and advertising. Almost unnoticed, academic discourses have reshaped our entire world view, becoming the dominant mode for interpreting reality and our own existence. We find traces of it not just in popular science periodicals but in the Sunday broadsheets and the TV documentary, it is the language of the pharmaceutical bottle and the toothpaste advertisement, the psychotherapist and the recycling leaflet. It is the carrier of expertise and prestige – the badge of those who possess knowledge and of those who wish to.

At the same time, in the framework of the contemporary knowledge-based economy, to keep their ‘social prestige’ and, above all, to obtain financial support, academics are increasingly required to establish a direct contact not only with the lay public but also with fund providers (be it private or public institutions) and persuade them of the worthiness, usefulness and the applicability of academic research in everyday life. As a result of all this, academics increasingly draw on the channels offered by the Web to promote their research.

Against this background, this section pays special attention to the way academics and researchers draw on TED talks in order to build up their identity as experts, express their belonging to a scientific community and promote their research.

For the purpose of this study, a contrastive analysis was carried out by comparing the genre of TED talks to that of university lectures in order to understand to what extent academics’ discursive practices change in these two settings. Among others (e.g. conference presentation, TV documentary), that of university lecture is the genre which shares the highest number of features with TED: in both contexts an expert conveys some (specialized) content to an audience of (semi) lay people drawing on different semiotic modes (i.e. written, spoken, video and audio) within a mostly monologic speech event (Caliendo/Compagnone 2014; Compagnone 2014). However, there is a substantial differences between lectures and TED talks which cannot be overlooked, that is, while in university lectures the instructor’s main concern is to train a group of students who know that they will be assessed at the end of the course, in TED talks academics present and ‘promote’ their research, also in an attempt to meet the expectations of an audience willing to be entertained while listening to some riveting stories as well as inspiring and innovative ideas.

Against this backdrop, consideration is given to changes in the way academics represent themselves discursively in the shift from the environment of the classroom to that of TED³⁷. This is seen as a crucial step to highlight differences in the communicative purposes of TED talks and university lectures.

To pursue this aim, attention is focused on to the distribution of first and second person pronouns in the two settings under scrutiny. As Rounds (1987a: 14) points out, “the relationship between language and context is most evident in the deictic system” while pronouns lie “at the intersection of the grammatical and pragmatic subsystem of language”, thus playing a fundamental role in the representation of both the speaker and the addressee.

For the purpose of this analysis, particular emphasis is placed on the use of the pronoun *we*, this being quite problematic in that, as Pennycook (1994: 175) points out, “[it] is always [...] a pronoun of solidarity and of rejection, of inclusion and exclusion”. In claiming both authority and commonality, the pronoun *we* “also constructs a *we/you* or a *we/they* dichotomy. Thus, these two pronouns must always be understood with reference to other assumptions about who is being defined as the *we* from which the *you* and the *they* differ” (Pennycook 1994: 176).

On the basis of previous research on the use of the pronoun *we* in university lectures (Rounds 1987a, 1987b; Fortanet 2004, 2006), its frequency in TED talks as well as its referents and discourse functions compared to those found in university lectures will be examined. Against this background, the following analytical research questions were established:

- Does the pronoun *we* perform similar discourse functions in the two pragmatic contexts under scrutiny?

³⁷ Speakers in the MICASE_lect corpus differ from those in the TED_ac corpus. Here, the term ‘shift’ is, in fact, used figuratively to refer to a process of ‘reconceptualization’ of academic discourse via the web-mediated genre of TED talks. Looking at the way the same speaker performs in the two contexts under scrutiny would have undoubtedly offered a deep insight into the study of popularization as a phenomenon of ‘recontextualization’. Unfortunately it was not possible to retrieve transcripts of the lectures TED speakers deliver in their home institutions. Nevertheless a contrastive analysis of MICASE university lectures and TED talks was still thought useful to highlight some of the distinguishing features of TED as a new genre.

- To what extent does the distinction between ‘hard’ and ‘soft’ sciences account for the distribution and use of *we* in lectures and TED talks?

In the following sub-sections emphasis is first put on the frequency of the pronoun *we* in MICASE_lect and TED_ac (§ 4.2.1). Attention is then paid to the referents of the pronoun *we* and its discourse functions in the two corpora (§ 4.2.2).

4.2.1 Frequency of *we* in MICASE_lect and TED_ac

In a study based on the analysis of a corpus of five lectures recorded at the University of Michigan and related to the discipline of mathematics, Rounds (1987a, 1987b) points out that speakers tend to use the pronoun *we* more frequently than the pronouns *I* and *you*. Contrariwise, by means of a search using a sub-corpus of lectures and colloquia drawn from MICASE³⁸, Fortanet (2004) comes up with opposite results: the pronouns *I* and *you* are more frequent than *we*. Both Rounds and Fortanet’s results are shown in Table 4.1 below.

TABLE 4.1
Frequency of first and second person pronouns in Rounds and Fortanet’s corpora (Fortanet 2004)

Pronouns	Rounds’ corpus		Fortanet’s corpus	
	Occurrences	Frequency ptw	Occurrences	Frequency ptw
I	301	11.5	13,827	17.9
me	26	1	1,180	1.5
we	907	34	7,450	9.7
us	35	1	610	0.8
let’s	92	3.5	644	0.8
you	335	12.5	16,000	20.7

As far as the results found in Fortanet are concerned, it must be noted that while the gap between *you* and *we* is statistically relevant ($p < 0.05\%$), the opposite is true when

³⁸ The MICASE sub-corpus used by Fortanet (2004) and the one used for this study have been collected drawing on different criteria. While Fortanet merged together lectures and colloquia, the MICASE sub-corpus used for this study consists of lectures only. This might partly justify differences in results.

comparing *I* to *we*. However, by means of a second search using an alternative corpus of three different speech events³⁹ related to mathematics – the discipline of Rounds’ corpus of lectures – Fortanet (2004) points out that the pronoun *I* is significantly more frequent than *we* (as well as than *you*). Against this background, she argues that “it is perhaps not the disciplinary and instructional character of mathematics that encourages a greater employment of *we*” and that “an explanation for Rounds’ anomalous results – in terms of the bigger MICASE picture – needs to be found elsewhere” (Fortanet 2004: 52).

As stated above, one of the main purposes of this study was to compare a corpus of TED talks delivered by academics to a corpus of lectures drawn from MICASE. Nevertheless, before moving on to this, it is necessary to compare the results obtained by looking at MICASE_lect (see Table 4.2 below) with those found in Rounds (1987a, 1987b) and Fortanet (2004). This comparison provides grounds for further considerations.

TABLE 4.2
Frequency of first and second person pronouns in MICASE_lect (348,005 tokens)

Pronouns	‘hard’ science lectures		‘soft’ science lectures		whole corpus
	Occurrences	Frequency ptw	Occurrences	Frequency ptw	TOT
I	1,925	11	2,511	14	12.7
me	152	0.9	242	1.3	1.1
we	1,855	11	1,473	8.1	9.5
us	73	0.4	134	0.7	0.5
let’s	197	1.1	113	0.6	0.8
you	3,359	20	3,717	20.6	20.3

As it is shown in Table 4.2 above, in MICASE_lect both *I* and *you* are more frequent than the pronoun *we*. However, in line with Fortanet’s results, it must be pointed out that while *you* (used both as subject and object) is significantly more frequent than *we* and its object related forms ($p < 0.05\%$), the opposite is true for *I*.

Moreover, comparing the two sub-sections of the MICASE_lect corpus with each other, it turns out that while in the ‘soft’ sub-group the pronoun *I* is more frequent

³⁹ A lecture, a colloquium and a study group transcript.

than *we*, in the ‘hard’ sub-group both singular and plural first person pronouns almost show the same frequency rate. This might seem to suggest that the use of first person pronouns within the genre of the university lecture depends, to an extent, upon the type of discipline the speech event is related to. Nevertheless, the gap between the occurrences of *we* and those of *I* in the ‘soft’ sub-group of lectures did not prove to be statistically relevant ($p > 0.05\%$). This means that the difference in the use of *we* and *I* in the two sub-groups is very likely to be due to chance alone.

TABLE 4.3
Frequency of first and second person pronouns in TED_ac (552,345 tokens)

Pronouns	‘hard’ science talks		‘soft’ science talks		whole corpus
	Occurrences	Frequency ptw	Occurrences	Frequency ptw	TOT
I	4,504	13.5	2,967	13.4	13.5
me	554	1.6	446	2	1.8
we	5,806	17.4	3,045	13.8	16
us	600	1.8	481	2	1.9
let’s	140	0.4	122	0.5	0.4
you	5,821	17.5	3,968	18	17.7

Comparing the frequency of first and second person pronouns in MICASE_lect to that in TED_ac (see Table 4.3 above), a difference catches the eye: *we* outnumbers *I*.

Although the gap between *we* and *I* is not statistically relevant, a keyword list of TED_ac, obtained by using MICASE_lect for a comparison, confirmed the saliency of the pronoun *we* in TED_ac. *We* is, in fact, the first keyword of the list with a highly reliable *p-value*⁴⁰ (see Table 4.4 below), followed by its related forms *our* and *us*.

⁴⁰ According to Baker (2006: 125), “a p-value (a number between 0 and 1) indicates the amount of confidence that we have that a word is key due to chance alone – the smaller the p-value, the more likely that the word’s strong presence in one of the sub-corpora is not due to chance but a result of the author’s (conscious or subconscious) choice to use that word repeatedly”.

TABLE 4.4
TED_ac keyword list

N	Keyword	Keyness	p-value
1	we	823.07	0.0000000000
2	our	492.01	0.0000000000
3	us	309.40	0.0000000000
4	universe	251.79	0.0000000000
5	brain	238.24	0.0000000000
6	to	237.53	0.0000000000
7	my	204.93	0.0000000000
8	going	196.00	0.0000000000
9	years	187.24	0.0000000000
10	people	180.83	0.0000000000
11	DNA	180.48	0.0000000000
12	ok	179.51	0.0000000000
13	thank	166.27	0.0000000000
14	human	154.82	0.0000000000
15	love	137.36	0.0000000000

As can be evidenced from Table 4.3 above, while in the ‘hard’ sub-category of TED_ac *we* ranks higher than *I*, in the ‘soft’ sub-category the two pronouns almost show the same frequency rate. However, the gap between the pronouns *I* and *we* is not high enough to warrant the claim that in the ‘hard’ sub-section the pronoun *we* is more frequently used than *I*.

Apparently, in both MICASE lectures and TED talks, the frequency in the use of the first and second person pronouns is not significantly affected by the subject area of the speaker. Moreover, evidence suggests that academics speaking at TED make a larger use of the pronoun *we* than do university lecturers. This is the reason why it was considered useful to investigate further the use of *we* in TED talks and university lectures.

4.2.2 Referents and discourse functions of *we* in MICASE_lect and TED_ac

Besides the traditional distinction between inclusive and exclusive uses of the pronoun *we* (Haas 1969; Spiegelberg 1973; Pennycook 1994; Kuo 1998; Biber *et al.* 1999), depending on whether or not the hearer is being referred to, Rounds (1987a) establishes some “semantic remappings” for the pronoun *we*:

- a) *we* in contexts in which *I* (i.e. the speaker) is more specifically marked (e.g. “*we* said that...”; the teacher is referring to some information which has already been given);
- b) *we* in contexts where the actual sole referent is the hearer (e.g. “I want to look at some of the problems *we* had for today...”);
- c) *we* having as its actual referent ‘anyone who does calculus’ (e.g. “*we* [mathematicians] call that number...”).

To these, Fortanet (2004: 54-59) adds the following categories:

- d) *reported-speech we* having as its referent a larger group of people (including the reported speaker and excluding the speaker and the hearer) (e.g. “this is what a faculty member told me. *We* hardly ever discussed anything”);
- e) *we* having as its referent a larger group of people (including speaker + audience) (e.g. “...humans have come up with m- terms of how to, acquire those things that they need, that *we* need...”);
- f) *we* having as its referent an indefinite *you* or *one* (e.g. “...they start doing this again, which would be like if *we* were to cough extendedly or hiccup extendedly”);
- g) *we* having as its referent *they*.

As stated above, drawing on a qualitative analysis, all these uses of the pronoun *we* were manually researched by carefully looking at every single occurrence of this pronoun in the MICASE_lect and TED_ac corpora. Following the same procedure carried out for the quantitative part, before moving on to the comparison between MICASE_lect and TED_ac, the results obtained by looking at MICASE_lect are compared to those found in Rounds (1987a) and Fortanet (2004). The referents of *we* in MICASE_lect are illustrated in Table 4.5 below.

TABLE 4.5
Referents of *we* in MICASE_lect

Referents	'hard' science lectures		'soft' science lectures		whole corpus
	Occ.	Freq. phw	Occ.	Freq. phw	TOT %
I	573	31.2	282	19.3	26
you	224	12.2	239	16.4	14
speaker + hearer	135	7.4	170	11.6	9.2
speaker + other people	83	4.5	50	3.4	4
larger group of people in reported direct speech (including the reported speaker)	49	2.6	140	9.6	5.7
larger group of people (including speaker + hearer)	64	3.5	64	4.4	4
indefinite <i>you</i> or <i>one</i>	595	32.4	349	24	28.7
they	28	1.5	39	2.7	2
unclassified ⁴¹	21	1.1	41	2.8	2
false starts	61	3.3	85	5.8	4.4

In a corpus of four lectures used by Fortanet for her qualitative search, the pronoun *we* has as its main referent the category “larger group of people in reported direct speech (including the reported speaker)”, this use being “always exclusive, since there is no logical link between the reported speaker and the audience” (Fortanet 2004: 57):

- (1) [...] and when folks came in for their check up and they were about three (few) weeks away from their due date (people) would say now, you know *we* don't want you just waiting too long and going into labor so (as) *we* have to deliver you here. (Fortanet 2004; Lecture 4)⁴²

⁴¹ A small number of occurrences of *we* in both MICASE_lect and TED_ac were ambiguous and could not be classified.

⁴² Italics added for emphasis in all examples.

The second most frequent referent of *we* in Fortanet's corpus is "larger group of people (including speaker + audience)", used by the speaker "to involve the audience in what s/he is saying" (Fortanet 2004: 57):

- (2) [...] humans have come up with m-terms of how to, acquire those things that they need, that *we* need. (Fortanet 2004; Lecture 2)

In Fortanet's corpus the pronoun *we* is also often used to refer either to the speaker (as *I*) or to the audience (as *you*) or to both of them excluding other people. As shown in Table 4.5 above, unlike the results found in Fortanet, in MICASE_lect the most frequent referent of *we* is "indefinite *you* or *one*". Unsurprisingly, the impersonal use is more frequent in the hard lectures (32.4%) than in the soft ones (24%), where self-mention and speculation are far more tolerated. The second most frequent referent of *we* in MICASE_lect is *I* (26%) through which "the speaker involves the students in actions s/he can only do" (Fortanet 2004: 58):

- (3) [...] uh *we* ended last time with the beginnings of political unrest in the uh march of Sulla on Rome, very briefly. Uh but *we* wanna go and t- take a f- a few steps back uh before *we* continue with that story. (MICASE_lect, History)

- (4) [...] what *we*'re gonna do, in, today's lecture, is *we*'re basically done with history, *we*'re done with methods, and *we*'re going on to biopsychology. (MICASE_lect, Psychology)

It is worth noting that, although in MICASE_lect speakers dealing with soft disciplines tend to use the pronoun *I* more frequently than speakers dealing with hard disciplines (see Table 4.2), "*we* as *I*" is significantly more frequent in the hard lectures (31.2%) than in the soft ones (19.3%).

As far as the referents of *we* in TED_ac are concerned, the results are illustrated in Table 4.6 below:

TABLE 4.6
Referents of *we* in TED_ac

Referents	'hard' science talks		'soft' science talks		whole corpus
	Occ.	Freq. phw	Occ.	Freq. phw	TOT %
I	124	2.2	46	1.6	1.9
you	80	1.4	20	0.7	1.2
speaker + hearer	132	2.3	71	2.4	2.4
speaker + other people	2,736	48.4	672	22.7	39.6
larger group of people in reported direct speech (including the reported speaker)	148	2.8	388	13.1	6.3
larger group of people (including speaker + hearer)	488	8.6	542	18.3	11.9
indefinite <i>you</i> or <i>one</i>	1,901	33.7	1,191	40.3	35.9
they	8	0.1	15	0.5	0.3
unclassified ⁴³	24	0.4	10	0.3	0.4
false starts	8	0.1	4	0.1	0.1

Unlike MICASE_lect, in TED_ac the most frequent referent of the pronoun *we* is “speaker + other people” (39.6%), followed by the referents “indefinite *you* or *one*” (35.9%) and “larger group of people (including speaker + hearer) (11.9%).

Besides its referents, Fortanet also looked at the discourse functions played by *we* in university lectures and it turned out that those found in her corpus could be grouped into two main categories: “metadiscourse function” and “representation-of-group function”. The first function includes uses of *we* as *I* and *we* as *you*, which serve to guide the hearer through the speech event:

- (5) *We*’re gonna talk a little bit about the development of vitamin E rich plants
(MICASE_lect, Biology)

⁴³ A small number of occurrences of *we* in both MICASE_lect and TED_ac were ambiguous and could not be classified.

(6) Make sure that *we* all, sort of understand what Darwin’s Theory of Evolution was about
(MICASE_lect, Psychology)

(7) As *we* can see the theme of today is the emergence of the monarchy (MICASE_lect,
History)

The second discourse function highlighted by Fortanet includes uses of the pronoun *we* with referents “speaker + hearer”, “speaker + other people”, “larger group of people in reported speech”, “larger group of people (including speaker + hearer)” and “*we* as *they*”. Table 4.7 below compares the discourse functions of *we* found in MICASE_lect with those found in TED_ac.

There is a striking difference between the two corpora: while in MICASE_lect *we* is more frequently used metadiscursively (see example (5)-(7) above), in TED_ac it is predominantly used for the representation of groups of people (9.4 occurrences per thousand words). Although the gap between metadiscursive and representational uses of *we* in MICASE_lect is not particularly high, in TED_ac the pronoun *we* used with a representation of groups function is significantly more frequent than in MICASE_lect.

TABLE 4.7
Discourse functions of *we* in MICASE_lect and TED_ac

Discourse functions	MICASE_lect		TED_ac	
	Occurrences	Freq. ptw	Occurrences	Freq. ptw
metadiscursive	1,318	3.8	270	0.4
representation of groups	822	2.3	5,200	9.4
indefinite <i>we</i>	67	0.2	23	0.04
unclassified	22	0.1	34	0.06

In order to see whether the observed difference in proportions of the representation-of-group *we* in MICASE_lect and TED_ac (2.3 vs. 9.4) was statistically significant, a chi-square test was performed by comparing the observed relative raw frequencies of *we* used to represent groups in MICASE_lect and TED_ac (see Table 4.8 below) with the

frequencies one would expect if there were no difference in proportions in the two corpora (see Table 4.9 below).

TABLE 4.8

Observed frequency of the representation-of-group *we* in MICASE_lect and TED_ac

	Number of representation- of-group <i>wes</i> spoken	Number of other words spoken	Total number of words spoken
MICASE	822 (0.2%)	347,183 (99.8%)	348,005 (100%)
TED	5,200 (0.9%)	547,145 (99.1%)	552,345 (100%)
TOTALS	6,022 (0.6%)	894,328 (99.4%)	900,350 (100%)

TABLE 4.9

Expected frequency of the representation-of-group *we* in MICASE_lect and TED_ac

	Number of representation- of-group <i>wes</i> spoken	Number of other words spoken	Total number of words spoken
MICASE	2,088 (0.6%)	345,917 (99.4%)	348,005 (100%)
TED	3,314 (0.6%)	549,031 (99.4%)	552,345 (100%)
TOTALS	5,402 (0.6%)	894,948 (99.4%)	900,350 (100%)

The chi-square test statistic was obtained by using the following formula (where O = number of observed frequencies and E = number of expected frequencies):

$$\chi^2 = \sum \frac{(O - E)^2}{E}$$

Once computed the chi-square test statistic, the result was compared with a set of chi-squared distribution values (Table 4.10 below) on one degree of freedom⁴⁴. This comparison was needed in order to calculate the p-value, i.e. the possibility that the difference between what is expected and what has actually been seen is due to chance alone. The higher the chi-square statistic, the lower the p-value.

TABLE 4.10
Chi-squared distribution values

Degrees of freedom	Probability		
	0.05	0.01	0.001
1	3.84	6.64	10.83
2	5.99	9.21	13.82
3	7.82	11.34	16.27
4	9.49	13.28	18.47
5	11.07	15.09	20.52

As far as the use of the representation-of-group *we* in MICASE_lect and TED_ac is concerned, the comparison between the obtained chi-square test statistic ($\chi^2 = 1851.9$) and the chi-square distribution on one degree of freedom (10.83) showed that the difference in proportions is statistically significant given a highly reliable p-value ($p < 0.001$). The test statistic obtained allows us to reject (at the 0,001% level) the null hypothesis, i.e., the possibility that the observed numerical difference in the use of the representation-of-group *we* in MICASE_lect and TED_ac is due to chance alone.

Against this background, what can thus be stated is that the representation-of-group *we* is significantly more frequent in TED_ac than in MICASE_lect and that the extensive use of this pronoun with this discourse function in TED_ac is not due to chance alone “but a result of the author’s (conscious or subconscious) choice to use that word repeatedly” (Baker 2006: 125).

⁴⁴ Such degree of freedom has been established on the basis of the following formula: $(r - 1) \times (c - 1)$; where r = number of rows and c = number of columns.

TABLE 4.11
Representation of groups in TED_ac

Groups	‘hard’ science talks	‘soft’ science talks	whole corpus
	%	%	TOT %
speaker + hearer	3.7	4.2	3.9
speaker + other people	78	39.8	65.5
larger group of people in reported direct speech	4.2	22.9	10.3
larger group of people (including speaker + hearer)	13.9	32.1	19.9
they	0.2	0.8	0.4

As shown in Table 4.11 above, the most frequent group represented in TED_ac is “speaker + other people” (65.5%). Besides, it is worth pointing out that this use of *we* is remarkably more frequent in the hard sub-section (78%). This may be accounted for by the fact that team work is more common a practice in the hard science domains:

(8) And so *we* are going to use molecules and refashion this thing, rebuild everything from the bottom up, using DNA in ways that nature never intended. (TED_ac, Biology)

(9) *We*’ve made remarkable impacts on cardiovascular disease but look at cancer. (TED_ac; Public Health)

(10) So there was the COBE satellite, which was launched in 1989, and *we* discovered these variations. (TED_ac, Astronomy)

(11) *We* have a tool that actually helps us out in this study. (TED_ac, Astronomy)

(12) [...] and then *we* did a series of calculations, and what *we* were able to show is that these mantis shrimps have to have a spring. (TED_ac, Biology)

As illustrated in example (8)-(12) above, the pronoun *we* is often used by academics in TED_ac to illustrate their own and their groups’ research aims, methodologies and discoveries, thus aligning themselves with a group of colleagues and at the same time

building up their image as experts. This can be considered the most significant finding as far as the use of the pronoun *we* in TED_ac is concerned⁴⁵ (cf. § 4.4). By aligning themselves to a group of experts – though excluding the lay hearer – speakers acquire a degree of credibility in the eyes of their audience. As Hyland points out (2004: 99), by “laying stress on their membership, their joint affiliation to a community-situated pursuit of knowledge is an important way that writers give persuasive weight to their texts.” In this way not only do academics at TED legitimize the information conveyed, they also seem to place emphasis on their authority, which in a classroom situation students are more likely to take for granted.

Against this background, a tendency of the TED format to place emphasis on the expertise of the speaker can also be detected if one looks at the way the TED website is organized – paying attention to the way web-users, and not the co-present audience, are addressed. As shown in Figure 4.1 below, besides the video recording of the talk, on the same page one can also find a link, “Full bio” (in the column to the right, circled in red), which leads to a page providing information about the speaker (Figure 4.2). Here, in addition to a list of motivations “why you should listen to him/her”, a series of links (in the column to the right, circled in red) to external web pages related to the expert are provided. In the Full-bio page dedicated to Allan Jones, for instance, one of the two links leads to the official web page of the Allen Institute for Brain Science (Figure 4.3), whose CEO is Allan Jones (Figure 4.4).

⁴⁵ Differences in the frequency, referents and discourse functions of *we* in TED_ac as opposed to MICASE_lect can also be accounted for by taking into account the fact that in the TED_ac corpus some of the speakers come from research institutes.

FIGURE 4.1
Allan Jones: A map of the brain (www.ted.com)

Ideas worth spreading

Talks	TED Conferences	TED Conversations	About TED
Speakers	TEDx Events	TED Community	TED Blog
Playlists NEW	TED Prize	TED-Ed	TED Initiatives
Translations	TED Fellows		

TALKS

Allan Jones: A map of the brain

FILMED JUL 2011 • POSTED NOV 2011 • TEDGlobal 2011

676,352 Views

Like 3

How can we begin to understand the way the brain works? The same way we begin to understand a city: by making a map. In this visually stunning talk, Allan Jones shows how his team is mapping which genes are turned on in each tiny region, and how it all connects up.

As CEO of the Allen Institute for Brain Science, Allan Jones leads an ambitious project to build an open, online, interactive atlas of the human brain. [Full bio »](#)

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Curated by TED

How exactly does the brain -- a 3-pound snarl of nervous tissue -- create inspired inventions, the feeling of hunger, the experience

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FIGURE 4.2
Allan Jones TED profile (www.ted.com)

Ideas worth spreading

Talks	TED Conferences	TED Conversations	About TED
Speakers	TEDx Events	TED Community	TED Blog
Playlists NEW	TED Prize	TED-Ed	TED Initiatives
Translations	TED Fellows		

Speakers Allan Jones: Brain scientist

As CEO of the Allen Institute for Brain Science, Allan Jones leads an ambitious project to build an open, online, interactive atlas of the human brain.

Allan Jones: A map of the brain
15:21 Posted: Nov 2011

Allan Jones on the Web

Home: [alleninstitute.org](#)
Home: [brain-map.org](#)

Related Speakers

Natalie Jeremijenko
Rachel Armstrong
Paul Bloom
Sebastian Seung

Events

Why you should listen to him:

The Allen Institute for Brain Science -- based in Seattle, kickstarted by Microsoft co-founder Paul Allen -- has a mission to fuel discoveries about the human brain by building tools the entire scientific community can use. As CEO, one of Allan Jones' first projects was to lead the drive to create a comprehensive atlas of the brain of a mouse. Flash forward to April 2011, when the Allen Institute announced the first milestone in its online interactive atlas of the human brain, showing the activity of the more than 20,000 human genes it contains. It's based on a composite of 15 brains, since even human brain is unique.

FIGURE 4.3
Allen Institute for Brain and Society official website

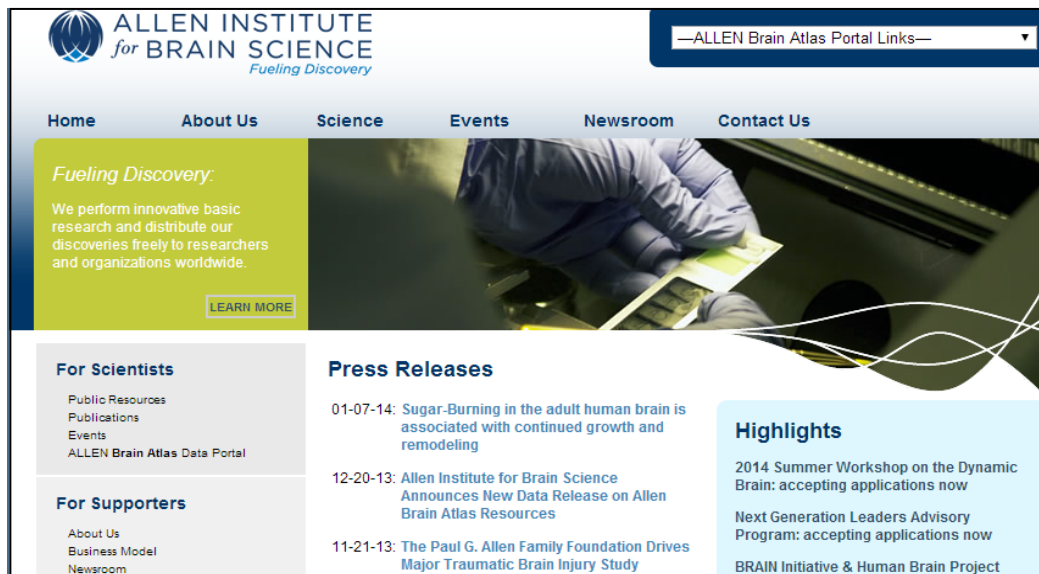
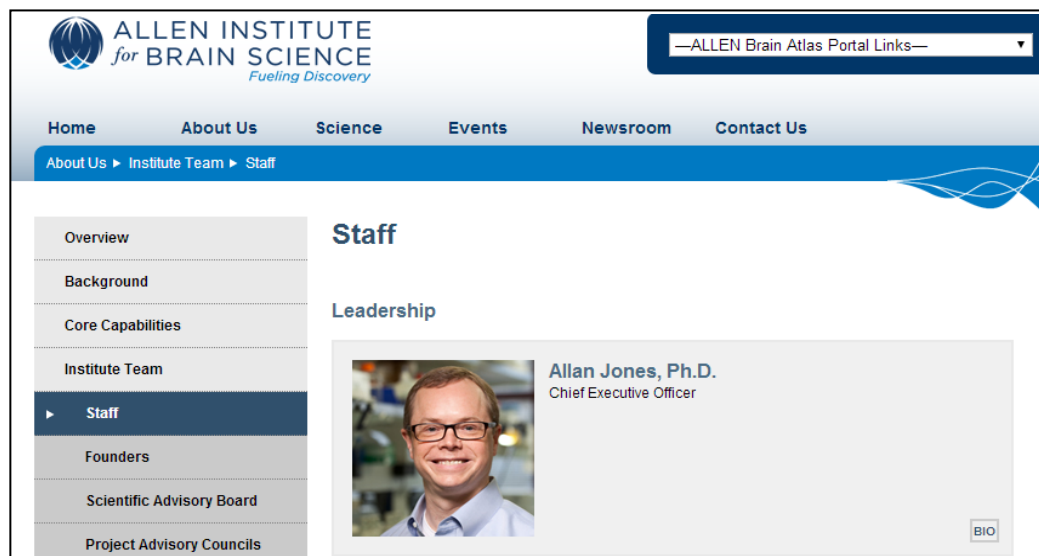
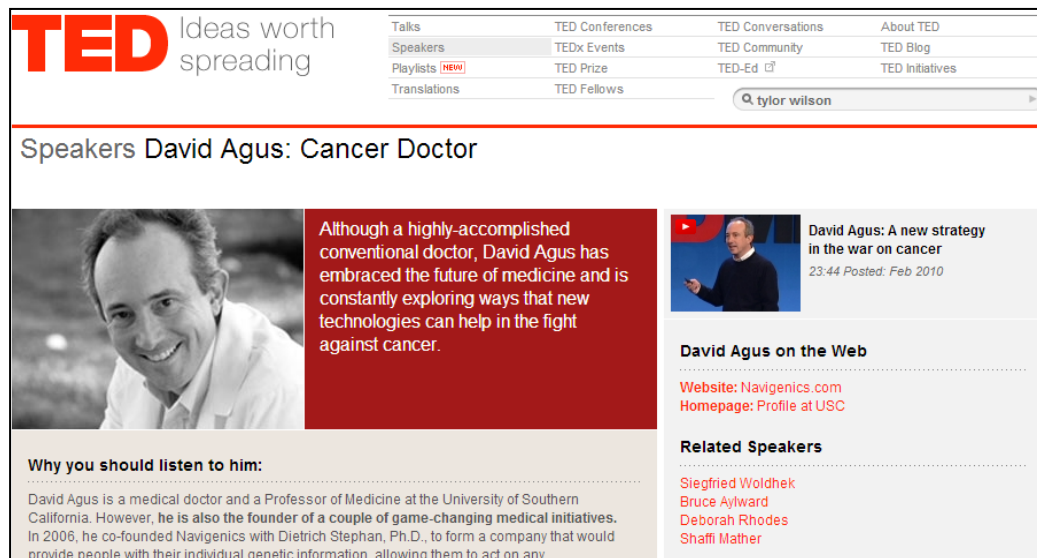


FIGURE 4.4
Allan Jones AIBS profile



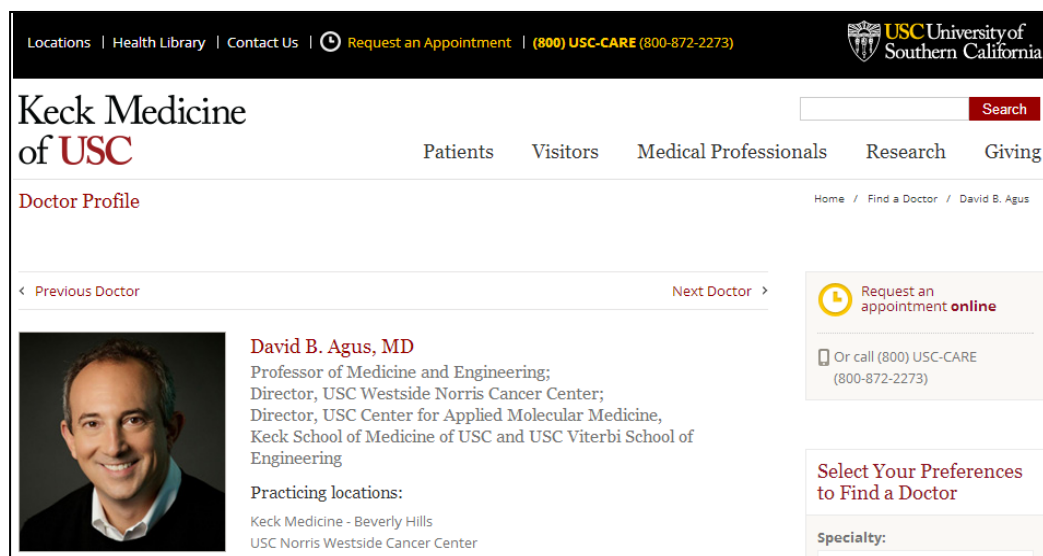
Another example is illustrated in Figure 4.5. Here one of the external links leads to the personal profile of David Angus on the official website of the University of Southern California (Figure 4.6).

FIGURE 4.5
David Agus TED profile (www.ted.com)



The screenshot shows the TED website's profile for David Agus. At the top, the TED logo is followed by the tagline "Ideas worth spreading". A navigation menu includes links for Talks, Speakers, Playlists, Translations, TED Conferences, TEDx Events, TED Prize, and TED Fellows. A search bar contains the text "tylor wilson". Below the navigation, the profile header reads "Speakers David Agus: Cancer Doctor". The main content area features a large black and white portrait of David Agus on the left. To the right of the portrait is a red text box with white text: "Although a highly-accomplished conventional doctor, David Agus has embraced the future of medicine and is constantly exploring ways that new technologies can help in the fight against cancer." Further right is a video thumbnail titled "David Agus: A new strategy in the war on cancer" with a duration of 23:44 and a post date of Feb 2010. Below the video is a section titled "David Agus on the Web" with links to "Website: Navigenics.com" and "Homepage: Profile at USC". At the bottom right is a section titled "Related Speakers" listing Siegfried Woldhek, Bruce Aylward, Deborah Rhodes, and Shaffi Mather. A section titled "Why you should listen to him:" is located below the portrait, containing a paragraph about his background as a medical doctor and professor at USC, and his role as co-founder of Navigenics.

FIGURE 4.6
David Agus USC profile



The screenshot shows the USC Keck Medicine website's profile for David B. Agus, MD. The top navigation bar includes links for Locations, Health Library, Contact Us, Request an Appointment, and (800) USC-CARE (800-872-2273). The USC University of Southern California logo is on the right. Below the navigation bar, the "Keck Medicine of USC" logo is prominent. A search bar is located to the right of the logo. The main navigation menu includes Patients, Visitors, Medical Professionals, Research, and Giving. The profile header reads "Doctor Profile" and "David B. Agus, MD". Below the header is a large black and white portrait of David Agus. To the right of the portrait is a text box containing his title and roles: "Professor of Medicine and Engineering; Director, USC Westside Norris Cancer Center; Director, USC Center for Applied Molecular Medicine, Keck School of Medicine of USC and USC Viterbi School of Engineering". Below this text is a section titled "Practicing locations:" listing "Keck Medicine - Beverly Hills" and "USC Norris Westside Cancer Center". To the right of the portrait is a section titled "Request an appointment online" with a phone icon and the text "Or call (800) USC-CARE (800-872-2273)". Below this is a section titled "Select Your Preferences to Find a Doctor" with a "Specialty:" dropdown menu.

The external web pages, like those shown in Figures 4.3, 4.4 and 4.6, work as extensions of the TED web space. Interestingly enough, not only do these external web pages contribute to the discursive construction of the speaker's identity as expert, they

also serve to legitimate TED as a prestigious popularizing format and to confer reliability on the content proposed.

4.2.3 To sum up

The contrastive analysis illustrated in this section aimed at exploring the way academics represent themselves (and their audience) discursively in the setting of the university lecture and that of TED. To this end, attention has been paid to the frequency of first and second person pronouns in TED_ac and MICASE_lect in order to see whether and to what extent the shift in context affects their distribution. More specifically, particular attention was paid to the way use and distribution of the pronoun *we* – significantly more frequent in TED_ac than in MICASE_lect – in these two genres are affected by the distinction between hard and soft sciences.

With reference to first singular and second person pronouns, differences in frequencies were not high enough to warrant the claim that their distribution in university lectures and TED talks is affected by either the genre or the discipline of the speaker. On the contrary, as far as the frequency of *we* is concerned, evidence suggests that this pronoun is significantly more frequent in TED_ac than in MICASE_lect.

As regards the referents of the pronoun *we*, in MICASE_lect the most frequent referent of *we* is *I* (i.e. the speaker), such use enables the speaker to establish involvement with the students during the communicative exchange (Fortanet 2004: 58) (e.g. “what *we*’re gonna do, in, today’s lecture [...] *we*’re going on to biopsychology”). In TED_ac instead the pronoun *we* has as its main referents “speaker + other people” thus excluding the audience (e.g. “*we* have a tool that actually helps us out in this study”).

Differences in the reference scope of *we* in the two corpora correspond to differences in its discourse functions. In MICASE_lect *we* is mostly used by academics with a “metadiscourse function”, in order to guide the hearer through the speech event (Fortanet 2004). In TED_ac *we* almost excludes the audience and is used by academics with a “representation-of-group function”. By means of this deictic device, TED speakers signal their belonging to a community or group of researchers so as to build up

their image as experts. This can be regarded as the most interesting finding as far as the use of *we* in TED is concerned (cf. § 4.4).

Person deixis proved to be a relevant linguistic phenomenon to look at, which made it possible to highlight differences between the genre of TED and that of university lecture. Unlike university lectures, where classroom language is significantly message-oriented (Rounds 1987: 16), evidence suggests that – despite their declared informative purpose – TED talks work as an alternative pragmatic space where academics build up their image as experts as well as promote their and their groups' research and findings.

4.3 Epistemic stance and evidentiality in TED

As already stated above, one of the main aims of this study is to identify some distinguishing features of the genre of TED talks by comparing them to university lectures. As already pointed out, when comparing TED talks to university lectures a substantial difference emerges: while in a classroom a lecturer's main objective is to train a group of novices, academics speaking at TED seem to be mostly interested in building up their image as experts, expressing their belonging to a scientific community and promoting their research, all this while providing a 'smart' form of entertainment by presenting inspiring and groundbreaking ideas.

Against this background, the following research question arose: to what extent do the argumentative practices used to present knowledge in TED talks differ from the ones used in university lectures? More specifically, in this section, consideration is given to the way academics delivering a TED talk:

- Present knowledge, with specific reference to the source of information expressed by evidence devices (e.g. use of verbs of perception and cognition).
- Convey “epistemic stance” (Conrad/Biber 2000), i.e., the way they comment on the knowledge status of the information (reference to expressions of certainty, uncertainty, likelihood, etc.).

In an attempt to address these questions, I have drawn on the notion of “evidentiality” (Chafe 1986; Aikhenvald 2004) whose interpretation is the object of contrasting perspectives. In her study, Aikhenvald (2004: 3) regards evidentiality as “a linguistic category whose primary meaning is source of information [...] without necessarily relating to the degree of speaker’s certainty concerning the statement or whether it is true or not.” In opposition to this view, Chafe (1986: 262) argues that evidentiality entails, in its “broadest sense”, all those expressions concerning “attitudes toward knowledge” rather than simply “expression of ‘evidence’ per se”. The latter interpretation is the one adopted for this study and dovetails with the concept of “epistemic stance” as theorized by Conrad and Biber (2000: 57). The scholars regard “epistemic stance” as one of the three major domains of ‘stance’, which focuses on the degree of “certainty (or doubt), reliability, or limitations of a proposition, including comments on the source of information” (Conrad/Biber 2000: 57).

Conrad and Biber’s (2000) notion of “stance” is strictly connected to that of “evaluation”, “a broad cover term for the expression of the speaker’s or writer’s attitude or stance towards, viewpoint on, or feelings about the entities or propositions that he or she is talking about” (Thompson/Hunston 2000: 5). On the basis of a combined approach, evaluation merges together the notions of “appraisal” (i.e. expression of value judgments) and “modalization” (i.e. commenting on the probability of a proposition), these being often considered as separate aspects of discourse (Halliday 1994; Martin 2000). As pointed out by Thompson and Hunston (2000: 6) evaluation performs three basic functions in discourse, these being:

- (a) to express the speaker’s or writer’s opinion, and in doing so to reflect the value system of that person and their community;
- (b) to construct and maintain relations between the speaker or writer and hearer or reader;
- (c) to organize discourse.

Against this backdrop, emphasis was placed on the semantic category of epistemic lexical verbs (ELVs) which, according to Hyland (1998: 119-120):

[...] represent the most transparent means of coding the subjectivity of the epistemic source [...]. By indicating the writer's confidence in a statement they contribute to the evidential reasoning between grounds and claims (Toulmin, 1958), and allow an evaluation of the intended degree of certainty.

More specifically, attention was paid to the four most recurrent ELVs (*see, show, know, think*) out of a list of thirty-nine verbs⁴⁶, as well as to the clusters of these four verbs in relation to first and second person pronouns in both MICASE_lect and TED_ac.

In the following sub-sections emphasis is placed first on the frequency of the thirty-nine ELVs, paying special attention to the most frequent ones, the verbs *see, show, know* and *think* and to their pronoun reference in both MICASE_lect and TED_ac (section 4.3.1). Attention is then paid to the clusters of the four most frequent ELVs in the two corpora under scrutiny (sections 4.3.2-4.3.5).

4.3.1 Epistemic lexical verbs: frequencies and collocations

On the basis of previous research on the category of epistemic lexical verbs (Chafe 1986; Hyland 1998; Artiga León 2006), a first quantitative search has been carried out by paying attention to the distribution of thirty-nine ELVs in MICASE_lect and TED_ac.

The verbs *know, see, show* and *think* turned out to be the four most frequent ELVs in both corpora. In both cases, these four verbs outnumber the remaining thirty-five verbs of the list, representing 74.13% and 73.26% of the whole category, in MICASE_lect and TED_ac respectively. The results are illustrated in Table 4.12 below. The first four most frequent ELVs are in bold:

⁴⁶ On the basis of previous studies three different classifications of ELVs were adopted (Chafe 1986; Hyland 1998; Artiga León 2006) and combined together to draw up the following selection of thirty-nine ELVs that were searched for in the two corpora under investigation: *admit, appear, argue, assume, attempt, believe, calculate, claim, conclude, consider, doubt, estimate, exhibit, feel, figure, guess, hear, imagine, imply, indicate, infer, judge, know, look like, note, notice, predict, propose, report, see, seek, seem, show, sound, speculate, suggest, suppose, suspect, think*.

TABLE 4.12
Frequencies of ELVs in MICASE_lect and TED_ac

	MICASE_lect	TED_ac	MICASE_lect	TED_ac	MICASE_lect	TED_ac
ELVs	Occurrences		Frequencies ptw		Comparative percentages	
admit	5	19	0.01	0.03	0.09	0.22
appear	31	51	0.08	0.09	0.57	0.60
argue	47	42	0.1	0.07	0.87	0.50
assume	100	36	0.2	0.06	1.85	0.42
attempt	8	35	0.02	0.06	0.14	0.41
believe	73	185	0.2	0.3	1.35	2.20
calculate	15	29	0.04	0.05	0.27	0.34
claim	7	10	0.02	0.01	0.12	0.11
conclude	11	26	0.03	0.04	0.20	0.31
consider	67	60	0.1	0.1	1.24	0.71
doubt	4	4	0.01	0.007	0.07	0.04
estimate	42	21	0.1	0.03	0.77	0.25
exhibit	6	9	0.01	0.01	0.11	0.10
feel	124	332	0.3	0.6	2.29	3.96
figure	24	8	0.06	0.01	0.44	0.09
guess	64	63	0.1	0.1	1.18	0.75
hear	81	275	0.2	0.4	1.49	3.28
imagine	45	206	0.1	0.3	0.83	2.45
imply	5	3	0.01	0.005	0.09	0.03
indicate	18	21	0.05	0.03	0.33	0.25
infer	4	1	0.01	0.001	0.07	0.01
judge	4	12	0.01	0.02	0.07	0.14
know⁴⁷	1,708	1,736	4.9	3.1	31.62	21.03
look like	63	148	0.1	0.2	1.16	1.76
note	28	12	0.08	0.02	0.51	0.14
notice	89	86	0.2	0.1	1.64	1.02
predict	51	88	0.1	0.1	0.94	1.04
propose	9	19	0.02	0.03	0.14	0.22
report	5	37	0.01	0.06	0.09	0.44
see	1,059	1,880	3	3.4	19.60	22.43
seem	138	124	0.3	0.2	2.55	1.47
seek	25	18	0.07	0.03	0.46	0.22
show	270	540	0.7	0.9	4.99	6.44
sound	21	61	0.06	0.1	0.38	0.72
speculate	5	4	0.01	0.007	0.09	0.04
suggest	64	72	0.1	0.1	1.18	0.85
suppose	112	78	0.3	0.1	2.07	0.93
suspect	2	19	0.005	0.03	0.03	0.22
think	967	1,984	2.7	3.5	17.90	23.67
TOTAL	5,401	8,381	14.41	14.3	100%	100%

⁴⁷ Occurrences of the verb *know* functioning as a filler, as in *you know*, have been discarded from the count.

Secondly, attention was paid to the co-occurrence of the four most frequent ELVs with first and second person pronouns. The results are illustrated in Tables 4.13 and 4.14 below:

TABLE 4.13

Pronoun reference in MICASE_lect

Lexical verb ⁴⁸	I	we	you
know	162	113	200
see	64	141	395
show	47	3	7
think	374	52	196
TOTAL	647 (1.8 ptw)	309 (0.8 ptw)	798 (2.2 ptw)

TABLE 4.14

Pronoun reference in TED_ac

Lexical verb	I	we	you
know	250	383	217
see	108	369	750
show	176	12	17
think	714	251	306
TOTAL	1,248 (2.2 ptw)	1,015 (1.8 ptw)	1,290 (2.3 ptw)

As shown in Tables 4.13 and 4.14 above, although *I* and *you* are more frequent in both MICASE_lect and TED_ac, the gap between these two pronouns and *we* is not big enough to assert that *I* and *you* dominate statistically in the two corpora. Compared to MICASE_lect, the gap is even smaller in TED_ac, where the pronoun *we* occurs with the four ELVs more frequently than in MICASE_lect.

The following sub-sections (4.3.2-4.3.5) illustrate the results of the comparative analysis of TED_ac and MICASE_lect with reference to the ELVs *see*, *show*, *know* and *think* and their most frequent clusters, also pointing at similarities and differences among ‘soft’ and ‘hard’ disciplines. Attention is first paid to the verb of perception *see*, followed by *show* and the two verbs of cognition *know* and *think*. The clusters of the

⁴⁸ Each ELV listed in Tables 10-12 includes all its inflected word-forms.

four ELVs under investigation were selected for the analysis when their occurrence was ≥ 10 .

4.3.2 Clusters of ELV *see* in MICASE_lect and TED_ac

As shown in Table 4.12 above, the verb *see* ranks second in both MICASE_lect (19.6%) and TED_ac (22.4%). The verb *see* belongs to the category of “mental verbs” which, following Biber *et al.* (1999: 362), “denote a wide range of activities and states experienced by humans” and whose subject “often has the semantic role of recipient”. Mental verbs can be divided into a series of subcategories depending on their meaning. *See* is a verb of perception and differentiates itself, for instance, from mental verbs having a cognitive meaning (e.g. *think*, *know*) or an emotional one (e.g. *love*, *want*) as well as from verbs denoting a receipt of communication (e.g. *read*, *hear*).

TABLE 4.15
Clusters of *see* in MICASE_lect

		whole corpus		‘hard’ science lectures		‘soft’ science lectures	
	Cluster	Occ.	Freq. ptw	Occ.	Freq. ptw	Occ.	Freq. ptw
1	you see	148	0.4	83	0.4	65	0.3
2	you can see	87	0.2	34	0.2	53	0.2
3	we see	61	0.1	17	0.1	44	0.2
4	you’ll see	32	0.09	13	0.07	19	0.2
5	let’s see	30	0.08	17	0.1	13	0.07
6	we can see	19	0.05	8	0.04	11	0.06
7	I see	17	0.04	11	0.06	6	0.03
8	we’ll see	16	0.04	10	0.05	6	0.03
9	you’re gonna see	12	0.03	9	0.05	3	0.01
10	you see that	11	0.03	6	0.03	5	0.02
11	you can see that	10	0.02	5	0.02	5	0.02

TABLE 4.16
Clusters of *see* in TED_ac

		whole corpus		‘hard’ science talks		‘soft’ science talks	
	Cluster	Occ.	Freq. ptw	Occ.	Freq. ptw	Occ.	Freq. ptw
1	you see	273	0.4	176	0.5	97	0.4
2	you can see	243	0.4	191	0.5	52	0.2

3	we see	190	0.3	119	0.3	71	0.3
4	we can see	52	0.09	46	0.1	6	0.02
5	you'll see	49	0.08	37	0.1	12	0.05
6	you can see that	45	0.08	32	0.09	13	0.05
7	you can see the	39	0.07	29	0.08	10	0.04
8	what you see	29	0.05	20	0.06	9	0.04
9	let's see	27	0.04	17	0.05	10	0.04
10	what we see	25	0.04	12	0.03	13	0.05
11	you see that	21	0.03	8	0.02	13	0.05
12	we see that	21	0.03	12	0.03	9	0.04
13	you see here	19	0.03	16	0.04	3	0.01
14	as you can see	18	0.03	15	0.04	3	0.01
15	you're going to see	15	0.02	14	0.04	1	0.004
16	you can't see	14	0.02	14	0.04	-	-
17	and you can see that	13	0.02	11	0.03	2	0.009
18	what you see here	12	0.02	10	0.03	2	0.009
19	we'll see	12	0.02	9	0.02	3	0.01
20	we see this	12	0.02	6	0.01	6	0.02
21	we're going to see	11	0.01	7	0.02	4	0.01
22	you see how	10	0.01	6	0.01	4	0.01
23	you can see it	10	0.01	10	0.03	-	-
24	you can see that the	10	0.01	6	0.01	4	0.01

As shown in Tables 4.15 and 4.16 above, in both MICASE_lect and TED_ac the most recurrent cluster of the verb *see* is *you see*, immediately followed by the cluster *you can see* which proves to be particularly interesting. As previously argued by Bamford (2009), by means of the cluster *you can see* in MICASE lectures knowledge tends to result from a visual aid source (e.g. a power point presentation, a blackboard) that the lecturer draws on to convey information.

However, in MICASE_lect the cluster *you can see* often marks a mental effort on the part of the listener (42% of the cases), who is asked by the lecturer to picture a state of affairs or a process in his or her own mind. This use is particularly frequent in the soft science subcategory. In such contexts, the verb *see* is semantically closer to cognitive verbs (e.g. *understand*, *know*, *think*):

- (13) Um, we begin as we did last time with the figure of Gaius Marius. In some ways and *you can see* in these people's activities some ups and downs. Marius, was never, single yo- uh the single all-powerful legislative figure. (MICASE, History)

(14) We believe it because we've seen it, in action, I mean *you can see* evolution happening.
(MICASE, Psychology)

(15) [...] where psychologists start to break down, is in whether or not you can account for, um not just physical changes evolving, but whether or not *you can see* behavioral changes and I'll try to make that clear as we go along. (MICASE, Psychology)

(16) Not necessarily the message he wanted to send while he was speaking, uh, but nobody could get him to stop doing that. um, so I mean *you can see* why there were certain problems. (MICASE, History)

Unlike what can be observed in MICASE_lect, in TED_ac the cluster *you can see* almost always signals the presence of a visual prop (93.7%). Such use is predominant in the hard science talks, although it can also be found in the soft science subcategory. As Chafe (1986: 267) points out, knowledge derived from sensory evidence is “high in reliability” – and knowledge presented from the TED stage is literally something you can see:

(17) So again, *you can see* the extension of this Great Wall of galaxies showing up here.
(TED, Astronomy)

(18) Now we're going to zoom back out, and *you can see* this structure that, when we get very far out, looks very regular, but it's made up of a lot of irregular variations. (TED, Astronomy)

(19) And finally, we did MRI and MR spectroscopy scans on some of these patients, and the tumor activity is shown in red in this patient, and *you can see* clearly it's better a year later, along with the PSA going down. (TED, Public Health)

(20) And *you can see* that each of the experimenters is actually holding up a little, yellow food dish and that's what the monkey can for a single token. So everything costs one token, but as *you can see*, sometimes tokens buy more than others, sometimes more grapes than others. (TED, Psychology)

(21) So this is a graph of prevalence estimated by UNAIDS, and prevalence based on the mortality data for the years in the late 1990s in nine countries in Africa. *You can see*, almost without exception, the UNAIDS estimates are much higher than the mortality-based estimates. (TED, Economics)

In MICASE_lect the verb *see* also occurs with the pronoun *we* (0.04%), though slightly less frequently if compared to *you* (0.1%) (see Table 4.13 above). According to Bamford (2009: 205), in university lectures the pronoun *we* mostly takes on an ‘inclusive’ value and it contributes “to draw the listener into the ongoing discourse and create intersubjectivity between speaker and audience”. This is also true for the MICASE_lect corpus, where the cluster *we can see* is mostly used metadiscursively by the author, i.e., it refers internally to the speech event in which it is found and is used to guide the hearer. Such use could be found in both the hard and soft science subcategories:

(22) Uh and as *we can see* the theme of today is the emergence of the monarchy, uh or how empire uh, made the Roman democracy impossible. (MICASE, History)

(23) So as a result, *we can see* that we can start getting cycles because of this delay, or this time lag, in the logistic. (MICASE, Natural Resources)

(24) So *we can see* in his own writings that he had a sense of humor. I mean there are passages in Caesar’s commentary, which are among the funniest bits of prose. (MICASE, History)

A similar metadiscursive function has also been found in TED_ac. However, unlike MICASE, TED speakers tend to use the cluster *we can see* in almost half of the cases (40.3%) in order to make reference to a visual source through which information can be inductively acquired through a sensory perception. This use can only be found in the hard science talks:

(25) So really, just an amazing image, slowed down extremely, to extremely slow speeds. And again, *we can see* it in slightly different form there, with the bubble forming and collapsing between those two surfaces. (TED, Biology)

Another interesting difference emerged when comparing the two corpora in greater detail. In TED_ac, the occurrence of *see* together with the pronoun *we*, not necessarily contiguous to each other, often marks a tendency of the speaker to present the piece of information as the result of the experimental observation (or as a hypothesis) of a whole

group of experts s/he belongs to. This is especially true in the hard science sub-category:

(26) So, again, this is stuff we're doing with Danny Hillis and a group called Applied Proteomics, where *we can start to see* individual neutron differences, and we can start to look at that system like we never have before. (TED, Public Health)

(27) They gave us endotracheal aspirate [...] We put it on the chip; *what do we see?* Well, *we saw* parainfluenza-4. (TED, Biochemistry)

(28) Now, what good are springy legs then? What can they do? Well, *we wanted to see if* they allowed the animals to have greater stability and maneuverability. (TED, Biology)

(29) Now, *we wanted to see if* we could actually record this on the track, so we headed down south to Laguna Seca. (TED, Engineering)

(30) We want to get to the point in our maps of the early universe *we can see* whether there are any non-linear effects that are starting to move, to modify, and are giving us a hint about how space-time itself was actually created at the beginning moments. (TED corpus, Astronomy)

(31) The next thing we looked at is in which case were people more likely to buy a jar of jam [...] Of the people who stopped when there were six, well now *we saw that* 30 percent of them actually bought a jar of jam. (TED, Business Administration)

As shown in examples (26)-(31) the pronoun *we*, on the one hand, excludes the audience while, on the other, it allows the speaker to mark his or her membership in a group of researchers so as to build his or her image as an expert. As already pointed out in section 4.2, this specific use of *we* could not be found in MICASE_lect. This result is in line with Fortanet (2004), whose study on the use of the pronoun *we* in university lectures recounts the statistically irrelevant use of this pronoun to refer to the category “speaker + other people”, i.e., the group of experts to which the speaker belongs.

4.3.3 Clusters of ELV *show* in MICASE_lect and TED_ac

The verb *show* ranks fourth in both MICASE_lect (4.9%) and TED_ac (6.4%), being slightly more frequent in the latter. *Show* belongs to the category of “activity verbs” which “primarily denote actions and events that could be associated with choice and so take a subject with the semantic role of agent” (Biber *et al.* 1999: 361). Though being a verb with a core meaning denoting an activity, like *see*, the ELV *show* usually indexes a visual source through which the piece of information is conveyed.

TABLE 4.17
Clusters of *show* in MICASE_lect

		whole corpus		‘hard’ science lectures		‘soft’ science lectures	
	Cluster	Occ.	Freq. ptw	Occ.	Freq. ptw	Occ.	Freq. ptw
1	I’ll show you	11	0.03	8	0.4	3	0.01
2	I’m gonna show you	10	0.03	8	0.4	2	0.01

As can be seen from Table 4.17 above, in MICASE_lect *I’ll show you* and *I’m gonna show you* are the only two clusters above the threshold set for the collection of the ELV clusters.

Similarly to what the speaker does in (22)-(24) using the cluster *we can see*, as exemplified in (32)-(33) below, the instructor makes use of *show* metadiscursively to guide the hearer throughout the speech event:

(32) The way that one gets *Agrobacterium* into a plant cell *I’ll show you* in just a second, allow those cells to grow up, and then you can regenerate whole plants, that are transgenic that express, the gene in this case the E-P-S-P gene. (MICASE, Biology)

(33) Here this is clearly a very depressed person they, you know, there’s no question that that is there. um *I’m gonna show you* an interview, in a little bit of a man who’s quite depressed. (MICASE corpus, Psychology)

The same clusters have also been found in TED_ac (Table 4.18 below) where, as exemplified in (34)-(37) below, they have a similar function:

(34) We synthesize happiness [...] though *I'm going to show you some experimental evidence*, you don't have to look very far for evidence. (TED, Psychology)

(35) So *I'm going to show you the results of a very large-scale simulation* of what we think the universe might be like. (TED, Astronomy)

(36) If it [energy] drifts away in the right pattern that we can calculate, this will be evidence that the extra dimensions are there. *Let me show you* that idea visually. (TED corpus, Physics)

(37) So *I'll show you* a quick video of what this marketplace actually looks like. (TED, Psychology)

It is worth pointing out that – apart from signalling the visual source used to convey information – in examples (34)-(37) the verb *show* also combines with some phrases expressing direct and tangible evidence (e.g. “some experimental evidence” (34), “the results of a very-large-scale simulation” (35)). In this way the information provided acquires a certain degree of reliability.

TABLE 4.18
Clusters of *show* in TED_ac

		whole corpus		'hard' science talks		'soft' science talks	
Cluster		Occ.	Freq. ptw	Occ.	Freq. ptw	Occ.	Freq. ptw
1	I'm going to show you	46	0.08	43	0.1	3	0.01
2	I'll show you	29	0.05	20	0.06	9	0.04
3	let me show you	23	0.04	16	0.04	7	0.03
4	I want to show you	19	0.03	14	0.04	5	0.02

An interesting cluster of *show* in TED_ac, which is mostly used in the hard science talks, is *I want to show you*:

(38) As a fish nerd, I have to laugh, because you know they don't call us fish nerds for nothing – we actually do get excited about finding a new dorsal spine in a guppy. But, it's much more than that. And, *I want to show you* a few of the guppies we've found over the years. (TED, Biology)

(39) Now, 100,000 feet, if you fly cross-country to Los Angeles, you fly 37,000 feet. *We* do our tests at 100,000 feet. And *I want to show you* one of *our* tests. (TED, Astronomy)

(40) And then finally, *I want to show you* some responses that *we* recorded with the world's first deep-sea webcam, which *we* had installed in Monterey Canyon last year. (TED, Biology)

(41) Well, a number of years later, I graduated from UCLA and I found myself at NASA, working for the jet propulsion laboratory, and there *our* team was challenged to create a 3D visualization of the solar system, and today *I want to show you* what *we*'ve done so far. (TED, Engineering)

In (38)-(41), by means of the cluster *I want to show you*, not only do TED speakers prospectively draw their listener's attention to the upcoming information, they also place emphasis on their and their group's research activity (also note the use of *we* and *our* in the examples above). By doing so speakers build up discursively their image as experts, while conferring high reliability on what is being conveyed to the audience. The fact that the cluster *I want to show you* cannot be found in MICASE_lect is revealing, since its function to present the speaker's and their group's research activity is not a priority in university lectures *vis-à-vis* TED talks.

4.3.4 Clusters of ELV *know* in MICASE_lect and TED_ac

The verb *know* ranks first in MICASE_lect (31.6%) while it is far less frequent in TED_ac, where it ranks third (21.3%) (see Table 4.12 above). The verb *know* belongs to the class of cognitive verbs, a subcategory of mental verbs (Biber *et al.* 1999: 362). With reference to the clusters of the verb *know* found in the MICASE_lect and TED_ac corpora, their distribution and frequency are presented in Tables 4.19 and 4.20 below:

TABLE 4.19
Clusters of *know* in MICASE_lect

		whole corpus		'hard' science lectures		'soft' science lectures	
	Cluster	Occ.	Freq. ptw	Occ.	Freq. ptw	Occ.	Freq. ptw
1	I don't know	86	0.2	43	0.2	43	0.2
2	we know	85	0.2	38	0.2	47	0.2

3	I know	61	0.1	35	0.2	26	0.1
4	you know what	38	0.1	18	0.1	20	0.1
5	you know that	38	0.1	17	0.1	21	0.1
6	you know it's	30	0.08	12	0.07	18	0.09
7	we know that	24	0.06	10	0.05	14	0.07
8	you know there's	17	0.04	7	0.04	10	0.05
9	you know when	16	0.04	5	0.02	11	0.06
10	you know how	15	0.08	-	-	15	0.08
11	I don't know if	14	0.04	7	0.04	7	0.03
12	I don't know how	12	0.03	7	0.04	5	0.02
13	I know that	11	0.03	8	0.04	3	0.01
14	we don't know	10	0.03	7	0.04	3	0.01
15	you know why	10	0.03	5	0.02	5	0.02

TABLE 4.20
Clusters of *know* in TED_ac

		whole corpus		'hard' science talks		'soft' science talks	
	Cluster	Occ.	Freq. ptw	Occ.	Freq. ptw	Occ.	Freq. ptw
1	we know	181	0.3	122	0.3	59	0.2
2	I know	133	0.2	60	0.1	73	0.3
3	I don't know	69	0.1	35	0.1	34	0.1
4	you know what	60	0.1	30	0.09	30	0.1
5	we know that	46	0.08	31	0.09	15	0.06
6	we don't know	36	0.06	31	0.09	5	0.02
7	we all know	28	0.05	17	0.05	11	0.04
8	you know that	24	0.04	12	0.03	12	0.05
9	you know it's	19	0.03	11	0.03	8	0.03
10	you know how	16	0.02	8	0.02	8	0.03
11	I know that	14	0.02	8	0.02	6	0.02
12	I know what	13	0.02	5	0.01	8	0.03
13	you don't know	13	0.02	4	0.01	9	0.04
14	what we know	12	0.02	5	0.01	7	0.03
15	I don't know if	11	0.01	3	0.009	8	0.03
16	we didn't know	11	0.01	11	0.03	-	-
17	we know what	11	0.01	7	0.02	4	0.01
18	you all know	10	0.01	5	0.01	5	0.02
19	I don't know how	10	0.01	4	0.01	6	0.02
20	I don't know what	10	0.01	7	0.02	3	0.01

As Table 4.19 above shows, in line with the results presented by Artiga León (2006), the most recurrent cluster of *know* in MICASE_lect is *I don't know*, which expresses the speaker's uncertainty or complete ignorance of a fact or event:

(42) Basically there's two strategies when they're developing products. and you're gonna tell very s- quickly where my bias is, um, and *I don't know* if that's just because, that's what I'm most familiar with or if that's truly what most of plant biotechnology is doing. (MICASE, Biology)

(43) [...] *I don't know* if that's still the case, but horiz- the Chebyshev travel occurs whenever you have two independent motors moving uh concurrently. (MICASE, Engineering)

An intriguing difference between the two corpora can be perceived in the case of the cluster *we know*, slightly more frequent in TED_ac. This cluster allows TED speakers in half of the cases (49%) to ascribe themselves to a group of experts or researchers and strengthen their authority as members of the scientific community. This use is predominant in the hard subcategory and could not be found in MICASE_lect, wherein the instructors' main concern is not to align themselves with a group of experts:

(44) So, the answer is bio-mimicry: just copy nature directly. *We know* from working on animals that the truth is that's exactly what you don't want to do – because evolution works on the just-good-enough principle, not on a perfecting principle. And the constraints in building any organism, when you look at it, are really severe. (TED, Biology)

(45) When one is exposed to H1N1, you take Tamiflu, and you can remarkably decrease the severity of symptoms and prevent many of the manifestations of the disease. Why? Because *we know* what you have, and *we know* how to treat it – although we can't make vaccine in this country, but that's a different story. (TED, Public Health)

(46) *We know* that if you reward kids for drawing pictures, they stop caring about the drawing and care only about the reward. (TED, Psychology)

Another interesting recurrent cluster of the verb *know* – which is used in both the hard and soft science categories and cannot be found in MICASE_lect – is *we all know*, an evaluative marker by means of which knowledge is accommodatingly presented as something both the speaker and his or her audience share:

(47) *We all know* that technology, entertainment and design have been and can be used for destructive purposes. *We also know* that technology, entertainment and design can be used to relieve misery. And by the way, the distinction between relieving misery and building happiness is extremely important. (TED, Psychology)

(48) They wanted to do something about what *we all know*, namely the revolving door of the criminal justice system. (TED, Psychology)

(49) *We all know* that some deep-sea creatures glow. Well, they've now taken that gene, that bioluminescent gene, and put it into mammal cells. (TED, Public Health)

(50) And then, of course, there's climate change, and *we all know* about climate change. I guess the iconic figure of it is the melting of the ice in the Arctic Sea. (TED, Biology)

As exemplified in (51) below, the cluster *we all know* also serves as a discourse organizing device in order to introduce and emphasize a new topic idea (underlined for emphasis):

(51) So deep inside, *we all know*, you go sufficiently far down, you have atoms. *We also all know* that atoms are not the end of the story. They have little electrons that swarm around a central nucleus with neutrons and protons. Even the neutrons and protons have smaller particles inside of them known as quarks. That is where conventional ideas stop. Here is the new idea of string theory. Deep inside any of these particles, there is something else. (TED, Physics)

As example (51) above shows, in terms of communicative dynamism, the cluster *we all know* can also be used in TED_ac to unfold the meaning in the theme-rheme structure (Halliday 1994). As a matter of fact, in example (51), something *we all know* is introduced first as theme (“you go sufficiently far down, you have atoms”; “atoms are not the end of the story”) and then a new topic idea follows as rheme (“deep inside any of these particles, there is something else”).

4.3.5 Clusters of ELV *think* in MICASE_lect and TED_ac

The verb *think* ranks third in MICASE_lect (17.9%), while it is more frequent in TED_ac where it ranks first (23.6%). Like the verb *know*, *think* is a mental verb of cognition. The most frequent clusters of the verb *think* are illustrated in Tables 4.21 and 4.22 below.

In line with what is pointed out by Artiga León (2006) in her study on academic lecturing based on MICASE, in the MICASE_lect corpus the verb *think* tends to frequently occur with the pronoun *I* (0.1%), as also shown in Table 4.13 above.

TABLE 4.21

Clusters of *think* in MICASE_lect

		MICASE		'hard' science lectures		'soft' science lectures	
	Cluster	Occ.	Freq. ptw	Occ.	Freq. ptw	Occ.	Freq. ptw
1	I think	314	0.9	110	0.6	204	1
2	you think	108	0.3	50	0.2	58	0.3
3	we think	30	0.08	17	0.1	13	0.07
4	I think that's	29	0.08	7	0.04	22	0.1
5	I don't think	25	0.07	10	0.05	15	0.08
6	I think that	25	0.07	10	0.05	15	0.08
7	if you think about	20	0.05	8	0.04	12	0.06
8	I think it's	20	0.05	7	0.04	13	0.07
9	if you think of	12	0.03	6	0.03	6	0.03
10	if you think about it	10	0.02	3	0.01	7	0.03

TABLE 4.22

Clusters of *think* in TED_ac

		TED		'hard' science talks		'soft' science talks	
	Cluster	Occ.	Freq. ptw	Occ.	Freq. ptw	Occ.	Freq. ptw
1	I think	507	0.9	289	0.8	218	0.9
2	you think	185	0.3	81	0.2	104	0.4
3	we think	125	0.2	74	0.2	51	0.2
4	I think that	52	0.09	26	0.07	26	0.1
5	I don't think	29	0.05	12	0.03	17	0.07
6	we think about	29	0.05	11	0.03	18	0.08
7	I think it's	25	0.04	20	0.06	5	0.02
8	if you think about	23	0.04	8	0.02	15	0.06
9	I think this is	19	0.03	3	0.009	16	0.07
10	I think that's	19	0.03	13	0.03	6	0.02
11	you think that	15	0.02	4	0.01	11	0.04
12	we think that	14	0.02	9	0.02	5	0.02
13	when we think about	13	0.02	3	0.009	10	0.04
14	if you think about it	11	0.01	3	0.009	8	0.03

Collocating with the first person pronoun, *think* is a recurrent stance marker through which the lecturer expresses opinions, indicates degree of certainty and comments on the information presented in a more subjective way. In (52)-(54) below not only does the speaker present knowledge as stemming from their cognition, the information also

carries an evaluative component as shown by the use of the evaluative adjectives *interesting* (52), *major* (53) and *complicated* (54).

(52) Cuz I knew you all wanted to know all of these exact numbers, but, it's because I - mostly because *I think* that some of these numbers are kinda *interesting*. (MICASE, Biology)

(53) So I point this out because, this piece of legislation was passed, and *I think* it's had a very, *major*, effect, on, uh bird conservation. (MICASE, Biology)

(54) Um, so *I think* this is a kind of *complicated* uh uh statement it's it's a little easier to be breaking, natural selection down into sort of what are the assumptions that are embedded in here and look at, uh a couple cases. (MICASE, Psychology)

As Table 4.14 above shows, in the TED_ac corpus, too, *think* tends to occur with *I* (0.1%) slightly more frequently than with *you* (0.05%) or *we* (0.04%). *I think* shows the same frequency rate in both MICASE_lect and TED_ac. Conversely, the cluster *we think* is less frequent in MICASE_lect (0.08%) than in TED_ac (0.2%). in TED_ac the cluster *we think* tends to be used to present knowledge from the perspective of a group of scientific experts the speaker belongs to. Such use is more frequent in the hard science subcategory:

(55) So *we think* synthetic cells are going to have tremendous potential, not only for understanding the basis of biology but for hopefully environmental and society issues. (TED, Biology)

(56) So we have a model, and we can calculate it, and we can use it to make designs of what *we think* the universe really looks like. (TED, Astronomy)

(57) We do this by shooting a laser up into the atmosphere, and what *we think* we can do is if we shine a few more that we can correct the rest. So this is what we hope to do in the next few years. (TED, Astronomy)

(58) *We think*, Ken and I, that there are real sources of hope. We identify one set of people in all of these practices who we call canny outlaws. (TED corpus, Psychology)

Laying stress on their affiliation and membership to a group of experts enhances the credibility and reliability of the information being provided by the speaker and makes the whole delivery more persuasive and grounded. As previous scholars would have it (Rounds 1987; Fortanet 2004), here *we* is used by academics with a “representation-of-group function” and has as its main referents the speaker and the category of experts she/he belongs to, thus excluding the audience. For the sake of comparative analysis, it is worth pointing out that no specific instance of this use of the personal pronoun *we* could be detected when searching the MICASE_lect corpus, where the pronoun mainly plays a metadiscursive role (cf. § 4.2).

4.3.6 To sum up

The contrastive analysis illustrated in this section was aimed at teasing out the way academics delivering a TED talk (1) present knowledge – with reference to the linguistic expression of the source of information – and (2) discursively express stance by means of epistemic lexical verbs in combination with first and second person pronouns.

The results of the corpus-based analysis show an interesting use of epistemic lexical verbs, with different nuances of meaning in the two corpora, also in relation to the pronouns that co-occur with them. Similarities and differences between the two corpora under scrutiny were also explored taking into consideration the differences emerging from the comparison between texts dealing with ‘soft’ and ‘hard’ disciplines.

Particular attention has been paid to the verbs *see*, *show*, *know* and *think*, the four most frequent ELVs in the two corpora under scrutiny.

As far as the verb *see* is concerned, in MICASE_lect it mainly works as a verb of cognition, through which the hearer is invited to make a mental effort to picture a state of affairs or a process in his or her mind. In TED_ac, *see* mainly works as a verb of sensory perception, through which the hearer is invited to focus on a visual support through which knowledge is conveyed. In TED talks both *see* and *show* stress the highly multimodal quality of the new genre, as these verbs are widely used to index the visible and tangible sources of knowledge being presented to the audience, therefore greatly increasing the degree of reliability of the information provided.

As regards *know* and *think*, in both MICASE_lect and TED_ac they work as cognitive verbs and express a judgmental stance on the part of the speaker. However, unlike in MICASE_lect, in TED_ac the speculative source of knowledge encoded by *know* and *think* often corresponds to a whole group of experts the speaker associates her/himself with by means of the pronoun *we*. This means that, though excluding the lay listener, experts acquire a certain degree of credibility in the eyes of their audience as consolidated members of a scientific research group.

The findings illustrated so far evidenced that TED talks, despite their declared informative purpose, differentiate from university lectures in that they work as an alternative pragmatic space where academics construct their image as experts by (a) laying stress on their affiliation to a community of experts and (b) promoting their group's research and findings, which are presented discursively as tangible and highly reliable (cf. 4.4).

4.4 Lexical aspect in TED

Given the saliency of *we* in TED_ac when compared to MICASE_lect (cf. § 4.2), it was considered necessary to investigate the use of this pronoun on the part of speakers in more detail, by looking at the ways in which it is employed in combination with verbs to represent themselves and situations discursively in the two settings under scrutiny, i.e., university lectures and TED talks. To pursue this aim, I have drawn on the notion of *Aktionsart* (Vendler 1957 [1967]; Van Valin/LaPolla 1997; Croft 2012) or “lexical aspect” (Croft 2012) – a theoretical framework aimed at understanding the way in which states of affairs and phenomena in the world are semantically represented through verbs and their arguments in terms of their inherent temporal properties⁴⁹.

⁴⁹ As Croft observes, “aspect is manifested both grammatically and lexically” (2012: 31). Sasse (2002: 2-3) draws a basic distinction between a “unidimensional” and a “bidimensional” approach to aspect, the former conceiving of grammatical and lexical aspect as being the same thing, the latter conceiving of grammatical aspect as distinct from lexical aspect. For the purposes of this study, a unidimensional approach to aspect was adopted as my aim was to explore whether differences in the distribution of the lexical aspectual verb categories in the two genres under scrutiny may help highlight distinguishing features of academic TED talks.

Referring back to Aristotle, Van Valin and LaPolla (1997: 82) propose four types of states of affairs:

- a. *Situations*: static, non-dynamic states of affairs which may involve the location of a participant (a book being on the table), the state or condition of a participant (Maria being tired), or an internal experience of a participant (Fred liking Alice).
- b. *Events*: states of affairs which seem to happen instantly, e.g. balloons popping, a glass shattering, a building blowing up.
- c. *Processes*: states of affairs which involve change and take place over time, e.g. a change in location (a book falling to the floor), in state or condition (ice melting, water freezing, clothes drying), or in the internal experience of a participant (Tanisha learning Swahili).
- d. *Actions*: dynamic states of affairs in which a participant does something, e.g. Chris singing, the ball rolling, the sun shining, a fire crackling, Yolanda swimming, the ground shaking, Tyrone drinking beer. (Van Valin/LaPolla 1997: 83)

States of affairs are mainly coded through language by means of verbs. Referring back to Vendler (1957 [1967]), Van Valin and LaPolla (1997: 91-102) identify four main verb classes on the basis of their different inherent temporal properties (or *Aktionsart*): “states”, “achievements”, “accomplishments” and “activities”. Each of these categories corresponds to one of the four above-mentioned state-of-affairs/event types. These four verb types are described as follows:

States are non-dynamic and temporally unbounded. Activities are dynamic and temporally unbounded. Achievements code instantaneous changes, usually changes of state but also changes in activities as well; they have an inherent terminal point. Accomplishments are temporally extended (not instantaneous) changes of state leading to a terminal point. (Van Valin/LaPolla 1997: 92)

These four verbal categories are more specifically defined in terms of three basic features: [\pm static], [\pm punctual] and [\pm telic] (see Table 4.23 below). Static verbs are those which do not code a ‘happening’, e.g., “John believes the world is round” (Van Valin/LaPolla 1997: 93). This is the main distinguishing feature of states. Telicity has to do with verbs depicting states of affairs with an inherent terminal point. Unlike states

and activities, both accomplishments and achievements have terminal points, e.g., “the clothes are drying on the line” (Van Valin/LaPolla 1997: 93). Punctual verbs are those which depict instantaneous changes of state. This is a distinguishing feature of achievements, whereas states, activities and accomplishments all involve temporal duration. This can be summarized as follows:

TABLE 4.23
Verb type properties⁵⁰ (Adapted from Van Valin/LaPolla 1997: 93)

States	[+static], [–telic], [–punctual]
Activities	[–static], [–telic], [–punctual]
Accomplishments	[–static], [+telic], [–punctual]
Achievements	[–static], [+telic], [+punctual]

On the basis of the above theoretical framework, in this section consideration is given to all the verb collocates of the pronoun *we* in TED_ac and MICASE_lect to investigate whether (and if so, to what extent) their distribution in the two corpora varies with reference to the above-mentioned lexical aspectual categories. Investigating the way in which academics make use of the pronoun *we* – which proved to be a salient linguistic

⁵⁰ In his recent monograph on *Verbs*, Croft (2012: 37) argues that “Vendler’s four-way categorization of aspectual types [...] is incomplete” and adds a series of “new aspectual types” to the list proposed by Vendler (1957 [1967]), which is revised and extended. As regards states, a basic distinction is drawn between “transitory states” (e.g. *be ill*, *be angry*) and “permanent states” (e.g. *be Polish*), while permanent states are further grouped in two sub-categories, “inherent permanent states” (e.g. *be Polish*) and “acquired permanent states” (e.g. *the vase is cracked*). Furthermore, referring back to Mittwoch (1988), emphasis is placed on “point states” (e.g. *it is 5 o’clock*, *the sun is at its zenith*, *the train is on time*). With reference to activities, a distinction is drawn between “directed activities” and “undirected activities”, the former being distinguished from the latter as representing “an unbounded but incremental directed change on a scale, i.e., an aspectual type distinct from (undirected) activities” (Croft 2012: 44) (e.g. *The soup cooled (for/in an hour)* vs. *Mark ran*). As far as achievements are concerned, a distinction is drawn among four sub-types: “reversible achievements” and “irreversible achievements” (e.g. *the door opened/closed twice* vs. **the mouse died twice*), “cyclic achievements” (or “semelfactive”), which denote “a punctual event that does not lead to a different resulting state” (Croft 2012: 39) (e.g. *Harriet coughed for five minutes*, *Harriet was coughing*), and “runup achievements”, which denote “a non incremental process leading up to an instantaneous transition to a resulting state” (Croft 2012: 41) (e.g. *Harry was repairing the computer*). Croft (2012: 44) summarizes his verb-types categorization as follows: (a) Four types of states: *inherent (permanent) states*, *acquired permanent states*, *transitory states*, and *point states*; the last could be seen as a subtype of transitory states; (b) Two types of activities: *directed activities* and *undirected activities*; (c) Two types of achievements: *reversible achievements* and *irreversible achievement*; (d) *Accomplishments*; (e) *Cyclic achievements* (semelfactives); (f) *Runup achievements* – not punctual like other achievements, but not incremental like Vendlerian accomplishments.

item in TED talks (cf. § 4.2) – in combination with verbs sorted in relation to their semantic properties was considered applicable for identifying some further distinguishing features of the genre of TED when drawn on by academics as well as to show the way in which academic discourse is reconceptualised in the new setting of TED.

4.4.1 Verb collocates of *we*

In order to explore the discursive use of *we* in TED_ac and MICASE_lect more in detail, a search was made of all its verb collocates⁵¹ (cf. Appendices A and B). Moreover, the verb collocates of *we* were sorted⁵² on the basis of the main four lexical verb categories (i.e. activities, states, accomplishments and achievements) found in the literature (Vendler 1957[1967]; Van Valin/LaPolla 1997; Croft 2012) (see Tables 4.24-4.25 below), also taking into account the distinction between ‘hard’ and ‘soft’ disciplines drawn in the two corpora.

As shown in Tables 4.24 and 4.25 below, the four lexical verb categories in TED_ac and MICASE_lect rank nearly the same (except for achievements, negligibly more frequent than activities in TED_ac, while the opposite is true in MICASE_lect). However, as far as their distribution in the two corpora is concerned, while the occurrences of states, activities and accomplishments in TED_ac double those in MICASE_lect respectively, quite interestingly, the occurrences of achievements in TED_ac are nearly three times more frequent than those in MICASE_lect (30.5 per ten thousand words vs. 11.3 per ten thousand words), as shown in Tables 4.24 and 4.25 below.

⁵¹ The count included all the lexical verbs occurring with *we* in MICASE_lect and TED_ac (except for *be*, *do* and *have* when used as auxiliaries, the semi-modals *be to* and *have to* and the modals *can*, *could*, *may*, *might*, *will*, *would*, *shall*, *should*) in a +4 span (e.g., *we think*, *we don't think*, *we have always thought*, *we would have never thought*).

⁵² For the purposes of the quantitative search carried out for this study, verbs have been sorted on the basis of their basic semantic properties (cf. Appendices A and B). However, as will be highlighted by means of the qualitative analysis illustrated in sections 4.4.2-4.4.5, the construal of predicates is also contingent upon other constraints such as tense-aspect constructions and the addition of specific PPs or Adverbials to the clause (Van Valin/LaPolla 1997; Croft 2012).

As far as the distinction between ‘hard’ and ‘soft’ disciplines is concerned, in TED_ac achievements are significantly more frequent in the ‘hard’ science sub-corpus (37.3 per ten thousand words) than in the ‘soft’ science one (20 per ten thousand words).

TABLE 4.24
Distribution of the verb collocates of *we* in MICASE_lect

Verb class	MICASE_lect ‘hard’		MICASE_lect ‘soft’		Whole corpus
	Occurrences	Freq. ptw	Occurrences	Freq. ptw	TOT
states	426	25.4	415	23	24
activities	301	18	228	12.6	15.2
accomplishments	21	1.2	11	0.6	0.9
achievements	234	14	162	9	11.3

TABLE 4.25
Distribution of the verb collocates of *we* in TED_ac

Verb class	TED_ac ‘hard’		TED_ac ‘soft’		Whole corpus
	Occurrences	Freq. ptw	Occurrences	Freq. ptw	TOT
states	1,654	51	1,051	47.7	49
activities	1,071	32.2	498	22.6	28.4
accomplishments	253	7.6	128	5.8	6.8
achievements	1,241	37.3	444	20	30.5

The following subsections, (4.4.2-4.4.5), illustrate the results of a qualitative analysis aimed at investigating the discursive functions of some of the most frequent verbs – sorted on the basis of the four lexical aspectual categories discussed above – used by academics in combination with the pronoun *we* to achieve their communicative purposes.

4.4.2 Activity verb collocates of *we* in TED_ac and MICASE_lect

In both MICASE_lect and TED_ac, the verb *do* is the most frequent activity verb collocating with the pronoun *we* (except for the ‘soft’ science sub-corpus of

MICASE_lect, where the verb *talk* is slightly more frequent than *do*) (see Tables 4.26-4.27 below).

TABLE 4.26
First ten activity verb collocates of *we* in MICASE_lect

MICASE_lect ‘hard’			MICASE_lect ‘soft’		
Lemma	Occurrences	Freq. pttw	Verb	Occurrences	Freq. pttw
do	72	4.2	talk	49	2.7
talk	67	4	do	44	2.4
look	40	2.3	call	30	1.6
call	31	1.8	look	22	1
use	28	1.6	use	10	0.5
measure	27	1.6	discuss	9	0.4
go	17	1	go	9	0.4
write	8	0.4	try	9	0.4
cover	6	0.3	read	8	0.4
compare	4	0.2	live	7	0.3

TABLE 4.27
First ten activity verb collocates of *we* in TED_ac

TED_ac ‘hard’			TED_ac ‘soft’		
Lemma	Occurrences	Freq. pttw	Verb	Occurrences	Freq. pttw
do	272	8.1	do	151	7
call	94	2.8	go	58	2.6
look	89	2.6	look	56	2.5
use	89	2.6	use	41	1.8
go	50	1.5	call	28	1.2
talk	35	1	try	20	1
live	33	0.9	live	17	0.7
try	31	0.9	tell	15	0.6
work	30	0.8	design	12	0.5
study	26	0.7	watch	11	0.4

According to Biber *et al.* (1999: 430), as a main verb, *do* is commonly found in idiomatic expressions in combination with specific noun phrases (e.g. *do the job*, *do the dishes*, *do some work*, *do the wash*, etc.) as well as in the function of a “pro-verb, substituting for some lexical verb” (e.g. *Well that’s why he did it*; *That really hurts my*

ears when you do that). As shown by means of the following qualitative analysis, these are the two functions performed by *do* while collocating with *we* in MICASE_lect and TED_ac.

In MICASE_lect the verb *do*, in combination with *we*, is mostly (86.4%) employed to describe an activity where the role of the instructor and that of the students can be roughly distinguished from each other. This is mainly due to the fact that, especially in the ‘hard’ disciplines, more often than not, the instructor employs the pronoun *we* to depict activities that are performed either by him or her only (36%), by his or her students only (20%) or by whomever being interested in the subject matter (30.4%):

(59) Good...*we can do* an eigenvalue analysis with the, stage-based models just like *we did* with the age-based models...to remind you of the definition here a vector *X* with the property that matrix multiplication is equivalent to scalar multiplication, so that the matrix times that special vector is equal to, a scalar times that special vector, for some scalar λ , it's called an eigenvector of the matrix and the scalar is the eigenvalue. (MICASE, Natural Resources)

(60) So let's take these D-one-twenty-two cells and transfect them with H-two-K D-N-A. transfection is a technique if you haven't heard it about it from your biology background let me just quickly say it's a, it's a laboratory method for introducing D-N-A into cells I'll talk more about it next week in m- in more detail, but it's just a way it was it was briefly described in the coursepack article as well, just a way to get foreign D-N-A into cells so we're getting this, D-N-A coding for the H-two-K, M-H-C gene, into the D-one-twenty-two cells. As soon as *we do* that and inject those cells now, back into mice, now they metastasize quite rarely. (MICASE, Biology)

(61) Okay so if you look at question number one, uh in your handout <PAUSE:05> we have that reaction, and we are, going to repeat it when we perform a reference blank test. and there is what *we do* in the labs so I have some N-A-C-L instead of H-G-C-L-two and we mix it with potassium iodide. (MICASE, Chemistry)

(62) And here are my three acidic protons, so I have three different P-K-A values for them, this one is <WRITING ON BOARD DURING NEXT :08 OF UTTERANCE> two-point-one-eight...this one is eight-point-nine-five <PAUSE:04> and this one is ten-point-five-three. Okay? So this one is almost like methylamine, this one is more acidic than en-methylamine and this one is definitely more acidic than acetic acid. So I've drawn the

form that exists at low P-H...and *we can do* the same thing we did, with alanine, add base and explore what happens, at each stage. so as I add base to the system I'm gonna lose one of these protons, which one's gonna go first? (MICASE, Chemistry)

Unlike in MICASE_lect, in the TED_ac corpus, as a collocate of *we*, the verb *do* is instead often used to depict research activities and experiments performed by the speaker and his/her expert colleagues. This happens especially in the 'hard' science talks, where a more frequent reference to experiments may be accounted for by the strongly empirical character of the subject matters dealt with:

(63) So, how do you find a buried city in a vast landscape? Finding it randomly would be the equivalent of locating a needle in a haystack, blindfolded wearing baseball mitts. So what *we did* is we used NASA topography data to map out the landscape, very subtle changes. (TED, Engineering)

(64) What *we did* is, we took tissue culture cells and infected them with adenovirus, and you can see this little yellow barcode next to adenovirus. And, likewise, we infected them with parainfluenza-3 – that's a paramyxovirus – and you see a little barcode here. (TED, Biochemistry)

(65) So how can we take this incredible capacity of plasticity of the brain and get people to experience their world differently? Well, one of the ways *we do* in my lab and studio is we translate the light into sound and we enable people to hear their visual world. And they can navigate the world using their ears. (TED, Neuroscience)

(66) So we started playing around with this. And as *we did* it, we realized this was the basic problem – that taking the sip of coffee – that there were humans doing this complicated process and that what really needed to be done was to automate this process like an assembly line and build robots that would measure proteomics. And so *we did* that, and working with David, we made a little company called Applied Proteomics eventually, which makes this robotic assembly line, which, in a very consistent way, measures the protein. (TED, Engineering)

(67) So what *we do* in my lab is we tempt people with virtue and vice by using money. Let me show you how *we do* that. (TED, Biology)

As shown in examples (63)-(67) above, with reference to the management of the information, functioning as a pro-verb and in combination with *we*, the verb *do* is used by the speaker either to rhematize an activity performed by him/her and his/her research team, by drawing the hearer's attention to the information contained in the subordinate clause following the *we + do* collocation (e.g. "what *we did* is *we used NASA topography data to map out the landscape*"; "What *we did* is, *we took tissue culture cells and infected them with adenovirus*"; "Well, one of the ways *we do* in my lab and studio is *we translate the light into sound and we enable people to hear their visual world*" in examples (63)-(65)), or to thematize it, by drawing the hearer's attention to the information preceding the *we + do* collocation (e.g. "So *we started playing around with this*. And as *we did it...*"; "what really needed to be done was to automate this process like an assembly line and build robots that would measure proteomics. And so *we did that*" in example (66)). In both cases, the speaker places emphasis on the activity s/he describes, either by presenting it as new information (through rhematization) or recovering it (through thematization) as a starting point from where information is further developed.

However, in TED_ac, as a collocate of *we*, the verb *do* also occurs with noun phrases functioning as direct objects:

(68) And finally, *we did MRI and MR spectroscopy scans* on some of these patients, and the tumor activity is shown in red in this patient, and you can see clearly it's better a year later, along with the PSA going down. (TED, Public Health)

(69) So this study, which I did with my graduate students, especially Craig Haney – we also began work with an ad. We didn't have money, so we had a cheap, little ad, but we wanted college students for a study of prison life. 75 people volunteered, took personality tests. *We did interviews*. Picked two dozen: the most normal, the most healthy. Randomly assigned them to be prisoner and guard. (TED, Psychology)

(70) *We did this experiment* with a group of patients who had anterograde amnesia. These are hospitalized patients. Most of them have Korsakoff's syndrome, a polyneuritic psychosis that – they drank way too much, and they can't make new memories. OK? They remember their childhood, but if you walk in and introduce yourself, and then leave the room, when you come back, they don't know who you are. (TED, Psychology)

(71) So the idea came to me of what about inspiring a path, a route – think the silk route, think the Appalachian trail – that followed in the footsteps of Abraham. People said, “That’s crazy. You can’t. You can’t retrace the footsteps of Abraham. It’s too insecure. You’ve got to cross all these borders. It goes across 10 different countries in the Middle East, because it unites them all.” And so we studied the idea at Harvard. *We did our due diligence*. And then a few years ago, a group of us, about 25 of us from about 10 different countries, decided to see if we could retrace the footsteps of Abraham, going from his initial birthplace in the city of Urfa in Southern Turkey, Northern Mesopotamia. (TED, Communication)

(72) So I’m at the Norman Lear Center at USC, and *we’ve done* a lot of *research* over the last seven, eight years on demographics and how they affect media and entertainment in this country and abroad. And in the last three years, we’ve been looking specifically at social media to see what has changed, and we’ve discovered some very interesting things. (TED, Communication)

As shown in examples (68)-(72) above, in TED_ac, both in the ‘hard’ and ‘soft’ science subcategories, the noun phrases combining with the *we + do* collocation often refer to the research activities and the investigations (e.g. “MRI and MR spectroscopy scans” in (68); “interviews” in (69) and “experiment” in (70)) performed by the speaker and his/her research team.

By and large, the way in which the verb *do* is used by academic TED speakers, in combination with the pronoun *we*, confirms that one of their main concerns is to promote scholarship by making reference to their research activity, while addressing mass audiences.

This communicative aim is also confirmed by the frequent usage of another activity verb collocate of *we* in TED_ac, i.e., the verb *use*, which ranks fourth in both the ‘hard’ and ‘soft’ subsections of the corpus (see Table 4.27):

(73) So, how do astronomers prove that there is a lot of mass inside a small volume? Which is the job that I have to show you today. And the tool that *we use* is to watch the way stars orbit the black hole. (TED, Astronomy)

(74) So we decided to test this in the lab. Now we don’t work with children, we don’t work with hitting, but the concept is identical. We bring in two adults. We tell them they’re going to play a game. And so here’s player one and player two sitting opposite to each

other. And the game is very simple. We started with a motor with a little lever, a little force transducer. And *we use* this motor to apply force down to player one's fingers for three seconds and then it stops. (TED, Neuroscience)

(75) So that's where we get our nitrogen from. But, if we want to go deeper, of course, we need another gas supply. We need helium, and the helium is what we really need to go deep. And usually we'll have a slightly larger cylinder mounted exterior on the rebreather, like this. And that's what *we use* to inject, as we start to do our deep dives. (TED, Biology)

(76) Oh, before I even turn that on, one of the things that we did about three weeks ago in my class – this is through the lens, and one of the things *we used* a lens for was to measure the speed of light. My students in El Cerrito – with my help, of course, and with the help of a very beat up oscilloscope – measured the speed of light. (TED, Astronomy)

(77) This is a representative patient who at the time was 73 – totally needed to have a bypass, decided to do this instead. *We used* quantitative arteriography, showing the narrowing. This is one of the arteries that feed the heart, one of the main arteries, and you can see the narrowing here. A year later, it's not as clogged; normally, it goes the other direction. These minor changes in blockages caused a 300 percent improvement in blood flow, and using cardiac positron emission tomography, or "PET," scans, blue and black is no blood flow, orange and white is maximal. (TED, Public Health)

(78) And this animation here shows you one example of the techniques that *we use*, called adaptive optics. You're seeing an animation that goes between an example of what you would see if you don't use this technique – in other words, just a picture that shows the stars – and the box is centered on the center of the galaxy, where we think the black hole is. (TED, Astronomy)

(79) And then the last thing I wanted to say, really, is to emphasize that the idea generalizes. So the same strategy that *we used* to find the code for the retina we can also use to find the code for other areas, for example, the auditory system and the motor system, so for treating deafness and for motor disorders. (TED, Neuroscience)

(80) What I want to share with you today is how *we've used* satellite data to find an ancient Egyptian city, called Itjtawy, missing for thousands of years. (TED, Engineering)

(81) Now *we've used this research* to try to understand not just how a normal person develops, and elaborates their skills and abilities, but also try to understand the origins of

impairment, and the origins of differences or variations that might limit the capacities of a child, or an adult. (TED, Neuroscience)

As shown in examples (73)-(81) above, the noun phrases occurring with the verb *use*, in combination with *we*, represent instruments (e.g. “a motor” in (74); “a cylinder” in (75); “a lens” in (76)), methods (e.g. “a quantitative arteriography” in (77)) and resources (e.g. “satellite data” in (80)) the speaker and his or her colleagues draw on in order to carry out their research activities.

In MICASE_lect, the verb *use* is also frequent. It ranks fifth in both the ‘hard’ and ‘soft’ subsections of the corpus. However, unlike in TED_ac, in MICASE_lect the verb *use* is clearly employed by the speaker to pursue a different communicative aim and highlights the instructional character of university lectures:

(82) Now the same algorithm is actually being used here, the difference is that *we use* array indexes, and what we do is store the index of the smallest item, and if we find a new smallest item we replace the index that we’re saving. (MICASE, Computer Science)

(83) Now the type for the string here is actually, course this typedef, uh name string is the generic, name that I’ll use for both the authors and the titles, and then, *we used* a constant there of course to set up the size. (MICASE, Computer Science)

(84) Uh nobody reported oxides on the surface, but we all reported uh uh uh the different residues of the different solvents *we were using*. (MICASE, Mechanical Engineering)

(85) Now another way we could get a time la- we could call this delayed density dependence then. <PAUSE:06> and this is usually put in the equations where *we just use* uh, a term tau <PAUSE:08> okay. (MICASE, Natural Resources)

(86) So artists and we’ve seen this, again we see this with Warhol, taking issue with ideas of originality, with authenticity with autonomy by attacking, the notion_ what’s that other A word that *we used* in relationship to Benjamin, in The Work of Art in the Age of Mechanical Reproduction? (MICASE, History of Art)

(87) So whether you use the equations or the picture, you’re talking about the same thing. *we could use* our total derivatives, to find the slope of the I-S curve. (MICASE, Economics)

Similarly to examples (59)-(62) concerning the discursive function of *do* in MICASE_lect, in examples (82)-(87) above the verb *use*, in combination with the pronoun *we*, is employed to describe activities involving the instructor, the students and everybody interested in the discipline dealt with and co-occurs with noun phrases which refer, metadiscursively, to the subject matter discussed. The alignment established by the *we* + *use* collocation between the instructor and his or her students can be basically accounted for by the fact that the latter tend to actively participate in experiments, while being trained in the discipline. This happens especially in the hard domains, where recourse to experiments is very common.

4.4.3 State verb collocates of *we* in TED_ac and MICASE_lect

Compared to the verbs belonging to the other three lexical aspectual categories, states are the most frequent verb collocates of *we* in MICASE_lect and TED_ac (see Tables 4.24-4.25 above). Among the states co-occurring with *we* in the two corpora, the verb *have* ranks first both in the ‘hard’ and ‘soft’ subsections of MICASE_lect and TED_ac (see Tables 4.28-4.29 below).

TABLE 4.28
First ten state verb collocates of *we* in MICASE_lect

MICASE_lect ‘hard’			MICASE_lect ‘soft’		
Verb	Occurrences	Freq. pttw	Verb	Occurrences	Freq. pttw
have	173	10.3	have	169	9.3
see	61	3.6	see	80	4.4
know	60	3.5	know	53	3
need	32	2	want	28	1.5
think	25	1.5	think	27	1.4
want	24	1.4	be	17	1
be	15	0.8	need	17	1
assume	12	0.7	like	11	0.6
consider	7	0.4	believe	4	0.2
expect	4	0.2	expect	4	0.2

TABLE 4.29

First ten state verb collocates of *we* in TED_ac

TED_ac ‘hard’			TED_ac ‘soft’		
Verb	Occurrences	Freq. ptw	Verb	Occurrences	Freq. ptw
have	404	12	have	232	10.5
know	261	7.8	see	122	5.5
see	259	7.7	be	110	5
think	148	4.4	know	109	5
be	140	4.2	need	104	4.7
need	138	4	think	103	4.6
want	116	3.4	want	78	3.5
like	23	0.6	like	23	1
hear	20	0.6	feel	17	0.7
be able to	18	0.5	believe	16	0.7

As Biber *et al.* (1999: 429) point out, as a lexical verb, “*have* can be used with various meanings marking many different kinds of logical relations”: (a) physical possession (e.g. *They had three tons of sugar*); (b) family connection (e.g. *Jim is aged 40 and has two children*); (c) food consumption (e.g. *The kids had “superhero sundaes” which turned out to be merely ice cream*); (d) existential (e.g. *But it really would be nice to have a young person about the house again*); (e) linking a person to some abstract quality (e.g. *You’re gonna have problems with your feet*); (f) linking an inanimate subject to some abstract quality (e.g. *Stylistics can have other goals than this*); (g) marking causation (e.g. *The problem continues to be that a religious-fascist state wishes to hire professional terrorists to have me killed*). Given its meanings, as a main verb, *have* is always found in the pattern *subject + have (got) + direct object*.

With the pronoun *we* in subject position, in both the ‘hard’ and ‘soft’ science subsections of the MICASE_lect corpus, this pattern always displays an “existential meaning” (Biber *et al.* 1999, 943), i.e., it predicates the existence or occurrence of something (including the no-existence or no-occurrence of something):

(88) [...] and so *we have* an equilibrium, where the proton is mostly on the nitrogen, and only a little bit on the oxygen atom of the amino acid. (MICASE, Chemistry)

(89) [...] and, when *we*, write that chemically, *we have* different ways we can symbolize it, uh we can write P-P-T, rather than spelling out that long precipitation word, or you can put

next to H-G-I-two which is the precipitate an arrow pointing down showing it's coming out of solution, or also another synonym, is to put next to the H-G-I-two, brackets S, close the brackets meaning a solid is being formed. (MICASE, Chemistry)

(90) [...] sometimes. certainly you have less tendency to scuffing...so that's the friction in marginal lubrication, next *we have* the wear, in marginal lubrication...uh how fast do these materials wear, uh when um in various uh types of lubrication? in figure nine two *we have* three curves. (MICASE, Mechanical Engineering)

(91) [...] we can uh, you know, with the elastohydrodynamics *we've got* alpha and E, to the point-seven power and then here *we've got* uh velocity and viscosity, divided by E-R, to the point-seven power, and a couple of other little things that are constant out front and so on, H over R, uh, that is a uh, we can calculate a film thickness. (MICASE, Mechanical Engineering)

As shown in examples (88)-(91) above, in MICASE_lect the pattern *we + have (got) + direct object* performs a metadiscursive function and is used by the instructor in order to guide the student throughout the speech event in an instructional and informative way.

Instances of the pattern *we + have (got) + direct object* with an existential meaning can also be found in TED_ac, especially in the 'soft' science sub-corpus:

(92) And in our society, *we have* a strong belief that synthetic happiness is of an inferior kind. Why do we have that belief? Well, it's very simple. What kind of economic engine would keep churning if we believed that not getting what we want could make us just as happy as getting it? (TED_ac, Psychology)

(93) So I'm here to tell you that *we have* a problem with boys, and it's a serious problem with boys. Their culture isn't working in schools, and I'm going to share with you ways that we can think about overcoming that problem. (TED_ac, Education)

(94) Vision is one of the best things we do. *We have* a huge part of our brain dedicated to vision – bigger than dedicated to anything else. We do more vision more hours of the day than we do anything else. And we are evolutionarily designed to do vision. And if *we have* these predictable repeatable mistakes in vision, which we're so good at, what's the chance that we don't make even more mistakes in something we're not as good at – for example, financial decision making: something we don't have an evolutionary reason to

do, we don't have a specialized part of the brain, and we don't do that many hours of the day. (TED_ac, Economics)

(95) So *we have* a lot of very romantic ideas in our culture about individualism. And our nation's really founded on a very romantic concept of individualism. Well you can imagine how startling then it is when you have children that are born who are two people inside of one body. (TED_ac, History)

As shown in examples (92)-(95) above, in TED_ac, the pattern *we + have (got) + direct object* often marks a link between an abstract (e.g. "a strong belief", "romantic ideas" in examples (92) and (95)) or a concrete entity (e.g. "a huge part of our brain" in example (94) above) and a "larger group of people" (Fortanet 2004) which, besides the speaker and the addressee, also includes other participants outside the speech event (cf. § 4.2.2). This referential function of the pronoun *we* confers a value of 'universality' on TED talks, in that it places emphasis on states of affairs regarding individuals in general, as either 'human beings' or 'members of society'.

Additionally, in the 'hard' subcategory of TED_ac another distinguishing discursive function of the pattern *we + have (got) + direct object* can be shown. Here, it has also been found to refer to the speaker's colleagues and collaborators (e.g. "Alex Norton", "oncologists", "biologists" in examples (96) and (97) below). This is one of the ways in which academic TED speakers mark their connection with a specific scientific community and their members:

(96) Behind the scenes is a working lab at Stanford University partnered with the Monterey Bay Aquarium. Here, for over 14 or 15 years, we've actually brought in both bluefin and yellowfin in captivity. We'd been studying these fish, but first we had to learn how to husbandry them. What do they like to eat? What is it that they're happy with? We go in the tanks with the tuna – we touch their naked skin – it's pretty amazing. It feels wonderful. And then, better yet, *we've got* our own version of tuna whisperers, our own Chuck Farwell, Alex Norton, who can take a big tuna and in one motion, put it into an envelope of water, so that we can actually work with the tuna and learn the techniques it takes to not injure this fish who never sees a boundary in the open sea. (TED_ac, Biology)

(97) So David and I applied to this program and created a consortium at USC where *we've got* some of the best oncologists in the world and some of the best biologists in the world,

from Cold Spring Harbor, Stanford, Austin – I won't even go through and name all the places – to have a research project that will last for five years where we're really going to try to build a model of cancer like this. We're doing it in mice first, and we will kill a lot of mice in the process of doing this, but they will die for a good cause. (TED_ac, Engineering)

Finally, as shown in examples (98)-(101) below, in TED_ac the pattern *we + have (got) + direct object* is also used by speakers to express “physical possession” of an object (Biber *et al.* 1999). The object is usually shared with a whole group of experts and is instrumental to the achievement of specific outcomes (e.g. “instruments”, “samples” and “data” in examples (98)-(100)) or to the promotion of the research activity conducted by the speaker and his or her community (e.g. “a website” in example (101)). This specific use has been detected in both the ‘hard’ and ‘soft’ sub-categories of TED_ac:

(98) *We have instruments* on Cassini which can see down to the surface through this atmosphere, and my camera system is one of them. And we have taken pictures like this. (TED_ac, Astronomy)

(99) So how are we doing on the project? *We've got about 25,000 samples* collected from indigenous people around the world. The most amazing thing has been the interest on the part of the public; 210,000 people have ordered these participation kits since we launched two years ago, which has raised around five million dollars, the majority of which, at least half, is going back into the Legacy Fund. (TED_ac, Biology)

(100) And a great way to learn about policy is to look at what worked in the past. The reason that we know that the ABC campaign was effective in Uganda is *we have good data* on prevalence over time. (TED_ac, Economics)

(101) It's a large effort. It's all at NASA Langley Research Center. And let me conclude by saying not too far from here, right down the road in Kittyhawk, North Carolina, a little more than 100 years ago history was made when we had the first powered flight of an airplane on Earth. We are on the verge right now to make the first flight of an airplane outside the Earth's atmosphere. We are prepared to fly this on Mars, rewrite the textbook about Mars. If you're interested in more information, *we have a website* that describes this exciting and intriguing mission, and why we want to do it. (TED_ac, Astronomy)

By referring to resources, tools and research materials, TED speakers place emphasis on the research activities they are directly involved in. This is also a way through which they can state their affiliation to a group of experts and build their professional identity discursively. This use of *have* could not be detected in MICASE_lect. This may be accounted for by the fact that in university lectures, the instructors' needs and concerns are not to promote findings nor to build up a credible image of themselves as experts. In the classroom their role is, in fact, already well established, while their main concern is rather to train a group of novices in a specific discipline.

Together with the epistemic lexical verbs *know*, *see* and *think* (which have been extensively explored and discussed in § 4.3), another frequent state verb collocating with *we* in MICASE_lect and TED_ac is *be*. The verb *be* ranks fifth and second in the 'hard' and 'soft' science sub-corpora of TED_ac, respectively and is slightly less frequent in MICASE_lect, ranking seventh and sixth in the 'hard' and 'soft' subcategories of the corpus, respectively.

According to Biber *et al.* (1999: 428), "*be* is the most important copular verb in English, serving to link the subject noun phrase with a subject predicative or obligatory adverbial". In MICASE_lect, the pattern *we + be + subject predicative/adverbial* plays a metadiscursive role and depicts a situation involving both the speaker and his or her audience of students:

(102) [...] and you may find that, your peer presentations, left you in some cases, (xx) uh feeling, well I'm not sure, about what those results were. it is really important to follow up on that, and in terms of even dropping in on another discussion, going to office hours, talking with your instructor about what happened there. also you will see on the syllabus that, just before exams occur, there will be a review session that I will do and some others will do, where I will highlight what the major findings were for the labs, to make sure that *we are* all in agreement. (MICASE, Chemistry)

(103) Now the structures are too big to write here so what I'm going to do is I'm going to label them, this is structure A <PAUSE:04> this is structure B, this is structure, C...and this is structure D. okay? so we have A, predominating in this region...we have B, predominating in this region, here *we are* at C, and we finally get, to D. (MICASE, Chemistry)

(104) the other thing that *we are* really interested in, especially when you get into biochemistry, medicine, is what is the form of the amino acid, at physiological P-H? what is the form in which it exists, the cells and the tissues, enzymes things like that? so that is the second P-H value that *we're gonna be* interested in. (MICASE, Chemistry)

(105) uh we assumed the load-handling times are a given, of course that only affects the cycle time *we're* interested in the travel time, so what's left? the four parameters rack height rack length, and the travel speed of the S-R machine in two directions. okay? well, let's first break this down...expected value of single command is really out to an opening, and back and whether you're doing storage or retrieval doesn't matter cuz you go empty out loaded back or you go loaded out and come back empty it's the same thing. (MICASE, Engineering)

As can be clearly evidenced by examples (102) and (105) above, unlike the TED audience, students are semi-lay hearers and, more often than not, are personally involved in the activities of a scientific community as practitioners who are being trained in a specific discipline. This is especially true in the 'hard' science domains and clearly marks a substantial difference between university lectures and TED talks which has to be taken into account when comparing these two genres.

As shown by examples (106)-(108) below, in the MICASE_lect corpus, the pattern *we + be + subject predicative* is also used by the speaker to describe a quality shared not only by him/her and his/her addressee, but also by a "larger group of people" (Fortanet 2004) outside the speech event, as members of a category (e.g. "vertebrates", "mammals", "capitalist society" and "nature" in examples (107) and (108)). This use can be detected in both the 'hard' and 'soft' science sub-corpora of MICASE_lect:

(106) Animals are made up, of a whole complex of systems, right the way from their biochemistry, through to the whole organism and so on, and the purpose of all those, is to provide some sort of, environment in the cells, for the metabolism, so it continuing functioning op- functioning optimally these kinds of things. in other words *we are* a mass of regulated systems, and those regulated systems are designed to provide a buffer, between, desirable conditions inside the animal for the biochemical aspects of metabolism, and the all too variable environment, which can, vary in ways that are not always predictable how many people were expecting a storm this morning? I wasn't I hung my washing on the line last night. [S2: oh no] yeah it wasn't much I'm a clean

guy...so, there are a whole of bunch of, c- uh situations regulated situations. (MICASE, Biology)

- (107) [Linneas] broke down the anim- the world into plants and animals because that's what he could see so there are two kingdoms, the plant kingdom and the animal kingdom, and then within each of these there were further subdivisions, and you can see these sort of as nested eggs. as, as the categories, get smaller and smaller as you go down. so that within each kingdom, there were a couple of phylum, and then within each phylum, there were, several classes, and within, the classes there were several orders, and within the orders there were several families, and within the families there were several genera, plural for genus, and within the genus, there're sometimes several species. for us, as homo s- uh ourselves, we of course get placed, in the animal kingdom, he had us in the phylum vertebrata *we are vertebrates, we are, vertebrates, we're* in the class mammalia *we're mammals*, and Linneas recognized all of this, and he put us in the order primates. (MICASE, Biology)

- (108) somebody asked me well are we_ a- after the last class somebody asked me, well are we affecting our evolution, are we taking over for natural selection well, w- *we are nature*. I mean *we're* all part of nature, natural selection just says when the environment changes, or the environment puts a press on it so if we introduce penicillin or another problem is pesticides, we introduce pesticides into the environment, some of the pests, are gonna be resistant to those. (MICASE, Psychology)

This use of the pattern *we + be + subject predicative* can also be detected in TED_ac. As pointed out in section 4.2.2, a “larger group of people” (also including the speaker and the hearer) is, in fact, the second most frequent group referred to by means of *we* (after the referential category “speaker + other people”) in TED_ac, especially in the ‘soft’ science sub-corpus (see Table 4.11):

- (109) We humans have many varieties of religious experience, as William James explained. One of the most common is climbing the secret staircase and losing ourselves. The staircase takes us from the experience of life as profane or ordinary upwards to the experience of life as sacred, or deeply interconnected. *We are* Homo duplex, as Durkheim explained. And *we are* Homo duplex because we evolved by multilevel selection, as Darwin explained. I can't be certain if the staircase is an adaptation rather than a bug, but if it is an adaptation, then the implications are profound. If it is an adaptation, then we evolved to be religious. (TED, Psychology)

- (110) And I believe it's because technology appeals to us most where *we are* most vulnerable. And *we are* vulnerable. *We're* lonely, but *we're* afraid of intimacy. And so from social networks to sociable robots, we're designing technologies that will give us the illusion of companionship without the demands of friendship. We turn to technology to help us feel connected in ways we can comfortably control. But we're not so comfortable. *We are not* so much in control. (TED, Sociology)
- (111) So what is the intuitive, but incorrect assumption, that's kept us from understanding brains? Now I'm going to tell it to you, and it's going to seem obvious that that is correct, and that's the point, right? Then I'm going to have to make an argument why you're incorrect about the other assumption. The intuitive but obvious thing is that somehow intelligence is defined by behavior, that *we are* intelligent because of the way that we do things and the way we behave intelligently, and I'm going to tell you that's wrong. What it is is intelligence is defined by prediction. (TED, Neuroscience)
- (112) Now this idea is not new. A then unknown philosopher named Adam Smith wrote a book in 1759 called "The Theory of Moral Sentiments." In this book, Smith argued that *we are* moral creatures, not because of a top-down reason, but for a bottom-up reason. (TED, Biology)
- (113) So it doesn't take much to realize that actually this is an environmental issue. And I kept thinking over and over again this question. We know so much about global warming and climate change, and yet, we have no concept of what I've been calling internal environmentalism. We know what we're putting out there, we have a sense of those repercussions, but *we are* so ignorant of this sense of what happens when we put things, or things are put into our bodies. (TED, Biology)
- (114) Let's remind ourselves that cells are not an abstract concept. Let's remember that our cells sustain our lives in a very real way. "*We are* what we eat," could easily be described as, "*We are* what our cells eat." And in the case of the flora in our gut, these cells may not even be human. But it's also worth noting that cells also mediate our experience of life. Behind every sound, sight, touch, taste and smell is a corresponding set of cells that receive this information and interpret it for us. It begs the question: shall we expand our sense of environmental stewardship to include the ecosystem of our own bodies? (TED, Engineering)

As shown in examples (109)-(114) above – although presenting themselves as members of a scientific community has been revealed to be a prerogative of academics speaking

at TED – the description of situations in which TED speakers and their audience are discursively constructed as part of a ‘larger’ category (e.g. “human beings”, “citizens”, etc.) is also important. This discursive move denotes, in fact, the attempt on the part of TED speakers to contextualize their presentations and link them to people’s daily life.

4.4.4 Accomplishment verb collocates of *we* in TED_ac and MICASE_lect

Among all the verb collocates of *we* in MICASE_lect and TED_ac, those belonging to the class of accomplishments are the least frequent ones in both corpora (see Tables 4.24 and 4.25). However, a qualitative analysis of some of the accomplishments collocating with *we* in TED_ac has been revealed useful to highlight some of the main purposes of academics speaking on the TED stage as opposed to academics lecturing in a university classroom.

As shown in Tables 4.24 and 4.25 above, accomplishments collocating with *we* in TED_ac are more frequent than those in MICASE_lect⁵³. Interestingly enough, although the gap between the frequencies of accomplishments in the two corpora is not wide enough to assert that this lexical category is significantly more frequent in TED_ac than in MICASE_lect, in TED_ac it was possible to detect some types of accomplishments used in combination with the pronoun *we* which could not be found in MICASE_lect and which signal the attempt on the part of the speaker to emphasize his or her role as expert and promote scholarship:

(115) So, *we built out the chip*. We *made a chip* that has every known virus ever discovered on it. Why not? Every plant virus, every insect virus, every marine virus. Everything that we could get out of GenBank – that is, the national repository of sequences. Now we’re using this chip. And what are we using it for? Well, first of all, when you have a big chip like this, you need a little bit more informatics, so we designed the system to do automatic diagnosis. And the idea is that we simply have virtual patterns, because we’re never going to get samples of every virus – it would be virtually impossible.
(TED, Biochemistry)

⁵³ The accomplishments collocating with *we* in TED_ac in a +4 span are: *make* (152 occ.), *learn* (68), *change* (37 occ.), *create* (33 occ.), *build* (27 occ.), *develop* (17 occ.), *produce* (9 occ.), *become* (7), *divide* (7 occ.), *calculate* (6), *generate* (6 occ.), *kill* (6), *record* (4) and *process* (2). The accomplishments collocating with *we* in MICASE_lect in a +4 span are: *make* (21) *change* (5) and *construct* (2).

- (116) And *we built software* that'll link functional magnetic resonance imaging devices up over the Internet. I guess we've done up to six machines at a time, but let's just focus on two. (TED, Neuroscience)
- (117) We're going to connect our command center, via a high-bandwidth satellite link to a *building we're building* at the University of Rhode Island, called the Interspace Center. (TED, Biology)
- (118) I led three diving expeditions to Antarctica. Ten years ago was a seminal trip, where we explored that big iceberg, B-15, the largest iceberg in history, that broke off the Ross Ice Shelf. And *we developed techniques to dive inside and under the iceberg*, such as heating pads on our kidneys with a battery that we dragged around, so that, as the blood flowed through our kidneys, it would get a little boost of warmth before going back into our bodies. But after three trips to Antarctica, I decided that it might be nicer to work in warmer water. And that same year, 10 years ago, I headed north to the Phoenix Islands. (TED, Biology)
- (119) Airbag designers also have the problem of getting flat sheets into a small space. And they want to do their design by simulation. So they need to figure out how, in a computer, to flatten an airbag. And *the algorithms* that *we developed* to do insects turned out to be the solution for airbags to do their simulation. And so they can do a simulation like this. Those are the origami creases forming, and now you can see the airbag inflate and find out, does it work? And that leads to a really interesting idea. (TED, Mathematics)
- (120) One of the things that *we've developed* in the lab – *we've developed several vehicles* – is what we believe is the world's first autonomously drifting car. (TED, Engineering)
- (121) So what *we calculated* was that the limbs were moving at the peak speed ranging from 10 meters per second all the way up to 23 meters per second. (TED, Biology)
- (122) So we have *a model*, and *we can calculate* it, and we can use it to make designs of what we think the universe really looks like. And that design is sort of way beyond what our original imagination ever was. So this is what we started with 15 years ago, with the Cosmic Background Explorer – *made the map on the upper right*, which basically showed us that there were large-scale fluctuations, and actually fluctuations on several scales. (TED, Astronomy)

Accomplishments always describe a dynamic process during which a patient in the object position (in transitive constructions, e.g. *John broke the window*) or in the subject position (in passive or intransitive constructions, e.g. *The window was broken*, *The window broke*) undergoes a change of state or condition. As shown in examples (115)-(122) above, the noun phrases in object position combining with the accomplishment verb collocates of *we* in TED_ac often represent the final outcome of a process during which the agent (i.e. both the speaker and his or her colleagues) brings something into existence (e.g. “a chip” in (115), “software” in (116), a “building” in (117), “techniques” in (118), “the algorithms” in (119), “several vehicles” in (120), “a model” and “the map” in (122)).

Additionally, in their attempt to promote their research and scholarship, as shown in examples (123)-(128) below, academics speaking at TED often draw on linguistic elements expressing positive evaluation such as adverbs (e.g. “a pattern...[which] works *perfectly* on its test range, and it *indeed* folds up into a neat little bundle” in (123)), adjectives (e.g. “Here’s the *cool* thing...we developed a team” in (124); “*very important* for those researchers that we’ve created this resource” in (128)), rhetorical questions (e.g. “*Amazing. Right?*”) in (126)) or mark the ‘uniqueness’ of their results (e.g. “we’ve developed *the first* wind map of the world” in (125), “we created a track record...*track records like that, there essentially are very few, if none*” in (127)), while speaking about their outcomes:

(123) And *we developed* a pattern together that scales to arbitrarily large size, but that allows any flat ring or disc to fold down into a very neat, compact cylinder. And they adopted that for their first generation, which was not 100 meters – it was a five-meter. But this is a five-meter telescope – has about a quarter-mile focal length. *And it works perfectly on its test range, and it indeed folds up into a neat little bundle.* (TED, Mathematics)

(124) *Here’s the cool thing.* Six or seven years ago, *we developed* a team. It was at the time in Houston, Texas. It’s now in Virginia and London. (TED, Neuroscience)

(125) So we’ve analyzed the hour-by-hour power demand and supply, looking at solar, wind, using data for California. And you can match that demand, hour-by-hour, for the whole year almost. Now, with regard to the resources, *we’ve developed the first* wind map of the world, from data alone, at 80 meters. (TED, Public Health)

(126) Here is David, in the right. And he is holding a camera. On the left is what his camera sees. And you'll see there is a line, a faint line going across that image. That line is broken up into 32 squares. In each square *we calculate* the average color. And then we just simply translate that into sound. And now he's going to turn around, close his eyes, and find a plate on the ground with his eyes closed. He finds it. *Amazing. Right?* So not only *can we create* a prosthetic for the visually impaired, but we can also investigate how people literally make sense of the world. (TED, Neuroscience)

(127) We've started in Chicago an organization – a non-profit organization – called Project Exploration. These are two kids from Project Exploration. We met them in their early stages in high school. They were – failing to poor students, and they are now – one at the University of Chicago, another in Illinois. We've got students at Harvard. We're six years old. And *we created* a track record. Because when you go out there as a scholar, and you try to find out longitudinal studies, *track records like that, there essentially are very few, if none*. (TED, Biology)

(128) And so *it's very important for those researchers that we've created* this resource. Now they can come in and they can start to get clues about activity. They can start to look at common pathways – other things that they simply haven't been able to do before. (TED, Neuroscience)

All in all, evidence shows that – mostly found in the past tense – accomplishments are used by academic TED speakers to place emphasis on the concrete and tangible outcomes of their research activities. This is one of the ways in which academics promote scholarship on the TED stage.

4.4.5 Achievement verb collocates of *we* in TED_ac and MICASE_lect

As far as the verb class of achievements is concerned, in TED_ac verbs belonging to this category collocate with the pronoun *we* significantly more frequently than in MICASE_lect (see Tables 4.24 and 4.25 above). Among all the achievements co-occurring with *we* in TED_ac, one of the most interesting ones is the verb *find*, which ranks second in both the 'hard' and 'soft' subsections of the corpus among the first ten achievement verb collocates of *we*, whereas it ranks third in the two subsections of MICASE_lect (see Tables 4.30-4.31 below).

TABLE 4.30

First ten achievement verb collocates of *we* in MICASE_lect

MICASE_lect ‘hard’			MICASE_lect ‘soft’		
Verb	Occurrences	Freq. ptw	Verb	Occurrences	Freq. ptw
get	50	3	get	50	2.7
say	35	2	say	19	1
find	25	1.5	find	12	0.6
start	21	1.2	start	12	0.6
take	18	1	mention	9	0.4
put	17	1	begin	8	0.4
define	10	0.5	take	8	0.4
get into	8	0.4	ask	6	0.3
add	7	0.4	put	5	0.2
get to	6	0.3	understand	5	0.2

TABLE 4.31

First ten achievement verb collocates of *we* in TED_ac

TED_ac ‘hard’			TED_ac ‘soft’		
Verb	Occurrences	Freq. ptw	Verb	Occurrences	Freq. ptw
take	214	6.4	get	56	2.5
find	171	5	find	43	2
get	134	4	start	38	1.7
start	84	2.5	take	37	1.6
understand	56	1.6	ask	27	1.2
put	54	1.6	understand	18	0.8
say	42	1.2	choose	12	0.5
figure	31	0.9	decide	12	0.5
ask	24	0.7	pay	12	0.5
get to	24	0.7	get to	11	0.4

The verb *find* belongs to the subcategory of “irreversible achievements” (Croft 2012: 43), i.e., it denotes a punctual and instantaneous change of state which cannot be reversed. In the case of *find*, there is a mental change of state involving an “experiencer” (Van Valin/LaPolla 1997: 85).

In MICASE_lect the verb *find* co-occurs with the pronoun *we* to describe an event which involves an “indefinite *you* or *one*” (Fortanet 2004), and everybody interested in the subject matter dealt with. In general, this referential use of *we* proved to

be the most common in this corpus of lectures – especially in the ‘hard’ discipline sub-corpus (cf. Table 4.5):

- (129) Now the same algorithm is actually being used here, the difference is that we use array indexes, and what we do is store the index of the smallest item, and if *we find* a new smallest item we replace the index that we’re saving. (MICASE, Computer Science)
- (130) Now I ask you how you know that’s our picture that uh these are bumps uh that, uh knock each other’s oxides loose, how else do *we find*, oxides piles up in flakes like this? (MICASE, Mechanical Engineering)
- (131) Now there’s another interesting uh, density dependence that *we can find*, and that has been found, and this is where we have our birth or death rate, and let’s just look at birth rate, and what happens is we have inverse, density dependence... and by this we mean that as the population is small gets smaller, the birth rate actually declines. (MICASE, Natural Resources)

This use of *we* co-occurring with *find* can also be detected in TED_ac. However, in TED_ac the verb *find* in combination with the pronoun *we* is mostly used by speakers in order to make reference to their and their group of experts’ discoveries. This use is particularly frequent in the ‘hard’ science sub-corpus:

- (132) So during the 10 years that we’ve been doing this work, we actually surprised ourselves. We made a number of discoveries. And what *we’ve found* is that if you look in the right place, you can actually monitor the flow of these viruses into human populations. That gave us a tremendous amount of hope. What *we’ve found* is a whole range of new viruses in these individuals, including new viruses in the same group as HIV – so, brand new retroviruses. (TED_ac, Public Health)
- (133) And what we’re looking for is the tiny dimming of light that is caused by a planet passing in front of one of these stars and blocking some of that starlight from getting to us. In just over two years of operations, *we’ve found* over 1,200 potential new planetary systems around other stars. To give you some perspective, in the previous two decades of searching, we had only known about 400 prior to Kepler. (TED_ac, Astronomy)
- (134) So a colleague of mine at Berkley, he and I were looking at Triceratops. And before the year 2000 – now remember, Triceratops was first found in the 1800s – before 2000, no one had ever seen a juvenile Triceratops. There’s a Triceratops in every museum in the

world, but no one had ever collected a juvenile. And we know why, right? Because everybody wants to have a big one. So everyone had a big one. So we went out and collected a whole bunch of stuff and *we found* a whole bunch of little ones. They're everywhere. They're all over the place. (TED, Biology)

(135) A FOXO is a protein that *we found* in these little, round worms to affect lifespan, and here it affects lifespan in people. So we've been trying in our lab now to develop drugs that will activate this FOXO cell using human cells now in order to try and come up with drugs that will delay aging and age-related diseases. (TED, Biochemistry)

(136) Now what do those differences look like? This is an example of a study that we did to follow up and see what exactly those differences were – and they're quite subtle. These are things where genes are turned on in an individual cell type. These are two genes that *we found* as good examples. One is called RELN – it's involved in early developmental cues. DISC1 is a gene that's deleted in schizophrenia. (TED, Neuroscience)

(137) Now we're also about to publish a study – the first study showing you can change gene expression in men with prostate cancer. This is what's called a heat map – and the different colors – and along the side, on the right, are different genes. And *we found* that over 500 genes were favorably changed – in effect, turning on the good genes, the disease-preventing genes, turning off the disease-promoting genes. (TED, Physics)

(138) And so, with funding from the Bosack-Kruger Foundation, I got a lot of strains from these different countries and we measured their toxin production in the lab. And *we found* that in Chile – within two months of the invasion of Peru you had strains entering Chile – and when you look at those strains, in the very far left-hand side of this graph, you see a lot of variation in the toxin production. (TED, Biology)

(139) And so what my team of researchers, what we wanted to do, is say, can we apply genetic and proteomic technology to go after DNA and proteins, and from this can we get better taxonomic resolution to really understand what's going on. And what *we found* is that we can find many commensal and pathogenic bacteria that inhabited the nasal passages and mouth. *We also have found* immune proteins related to infection and inflammation and proteins and DNA related to diet. But what was surprising to us, and also quite exciting, is *we also found* bacteria that normally inhabit upper respiratory systems. So it gives us virtual access to the lungs, which is where many important diseases reside. (TED, Biology)

Although this use of *find* is particularly frequent in the ‘hard’ science sub-corpus, references to discoveries made by the speaker and his or her research team can also be detected in the ‘soft’ discipline sub-corpus of TED_ac:

(140) So, several years ago, I decided to look into the brain and study this madness. Our first study of people who were happily in love has been widely publicized, so I’m only going to say a very little about it. *We found* activity in a tiny, little factory near the base of the brain called the ventral tegmental area. *We found* activity in some cells called the A10 cells, cells that actually make dopamine, a natural stimulant, and spray it to many brain regions. (TED, Anthropology)

(141) Ok, so what’s on the first draft of the moral mind? To find out, my colleague, Craig Joseph, and I read through the literature on anthropology, on culture variation in morality and also on evolutionary psychology, looking for matches. What are the sorts of things that people talk about across disciplines? That you find across cultures and even across species? *We found* five – five best matches, which we call the five foundations of morality. (TED, Psychology)

Instances of *we* co-occurring with the verb *find* to report discoveries in MICASE_lect were only detected in a single lecture contained in the corpus. However, making reference to one’s own research findings in a university classroom cannot be seen as serving the same purpose it does on the TED stage. In fact, while in a classroom reporting about a research finding is meant to provide students with information which is functional to the furthering of the lecture, in the popularizing setting of TED talks this is instead one of the ways in which academics promote their research and build up their identity as experts. As shown in examples (142)-(146) below, other achievement verbs (e.g. *discover*, *come up with* and *come away with*) – which could not be found in MICASE_lect – are used by academic TED speakers to accomplish the same purpose as that of *find*:

(142) Now, in my lab at Stanford, we’ve been working on autonomous cars too, but with a slightly different spin on things. You see, we’ve been developing robotic race cars, cars that can actually push themselves to the very limits of physical performance. [...] As we’ve looked at the question of how well do these cars perform, we wanted to compare them to our human counterparts. And *we discovered* their human counterparts are amazing. Now, we can take a map of a race track, we can take a mathematical model of

a car, and with some iteration, we can actually find the fastest way around that track. We line that up with data that we record from a professional driver, and the resemblance is absolutely remarkable. (TED, Engineering)

(143) So it's a big design job, but we'll see about how things are going on. So the way these measurements were done, there's been a set of satellites, and this is where you get to see. So there was the COBE satellite, which was launched in 1989, and *we discovered* these variations. (TED, Astronomy)

(144) One of the questions we've confronted is, what are the signals in the brain that mediate the sensation of reward? Because if you could find those, those would be some of the signals that could drive learning. The brain will do more of whatever got that reward. And also these are signals that go awry in disorders such as addiction. So if we could figure out what cells they are, *we could maybe find* new targets for which drugs could be designed or screened against, or maybe places where electrodes could be put in for people who have very severe disability. So to do that, *we came up with* a very simple paradigm in collaboration with the Fiorella group, where one side of this little box, if the animal goes there, the animal gets a pulse of light in order to make different cells in the brain sensitive to light. So if these cells can mediate reward, the animal should go there more and more. (TED, Bio-Engineering)

(145) So, this is how I began, about 15 years ago. I'll admit, it wasn't exactly the smartest of starts, but, you know, you got to start somewhere. At the time, I wasn't the only one who didn't know what I was doing – almost nobody did. And this rig was actually used for a dive of 300 feet. Over time we got a little bit better at it, and *we came up with* this really sophisticated-looking rig with four scuba tanks and five regulators and all the right gas mixtures and all that good stuff. And it was fine and dandy, and it allowed us to go down and find new species. (TED, Biology)

(146) We've flown the Cassini Spacecraft by this moon now several times, flying closer and deeper into these jets, into the denser regions of these jets, so that now *we have come away with* some very precise compositional measurements. And *we have found* that the organic compounds coming from this moon are in fact more complex than we previously reported. (TED_ac, Astronomy)

Another interesting achievement verb collocate of *we* found in TED_ac is *start*, which ranks fourth both in the two sub-corpora of MICASE_lect and in the 'hard' discipline sub-corpus of TED_ac, whereas it ranks third in the 'soft' discipline sub-corpus of

TED_ac. Biber *et al.* (1999: 364) place the verb *start* in the category of “aspectual verbs”, as this is thought to “characterize the stage of progress of some other event or activity, typically reported in a complement clause following the verb phrase”.

As shown in examples (147)-(149) below, the verb *start* is used by academic TED speakers to place emphasis on the beginning of activities which have led the speaker and his or her team to specific discoveries (e.g., “So then we started to look at other bacteria, and *these are just a smattering of the molecules that we’ve discovered*” in (147), “And *we started* working on it, and *we figured out we could tell the temperature of the ancient ocean from analyzing a coral like this*” in (149)) or to mark a special ability s/he and his or her team have developed (e.g. “We started *to be able to see where the Nile used to flow*” in (148)):

(147) We also then went to look at what are these molecules – these were the red triangles on my slides before. This is the *Vibrio fischeri* molecule. This is the word that it talks with. So then *we started* to look at other bacteria, and these are just a smattering of the molecules that *we’ve discovered*. (TED, Biology)

(148) So, how do you find a buried city in a vast landscape? Finding it randomly would be the equivalent of locating a needle in a haystack, blindfolded wearing baseball mitts. So what we did is we used NASA topography data to map out the landscape, very subtle changes. *We started* to be able to see where the Nile used to flow. (TED, Engineering)

(149) Here’s how we sample the corals. This is actually Easter Island. Look at this monster. This coral is eight meters tall, right. And it been growing for about 600 years. Now, Sylvia Earle turned me on to this exact same coral. And she was diving here with John Lauret – I think it was 1994 – and collected a little nugget and sent it to me. And *we started* working on it, and we figured out we could tell the temperature of the ancient ocean from analyzing a coral like this. (TED, Biology)

In MICASE_lect, the *we + start* collocation always performs a metadiscursive function, signalling the beginning of an activity either involving the instructor only, who tries to engage his or her students by means of an inclusive *we*, or whomever interested in the discipline dealt with.

4.4.6 To sum up

The contrastive analysis illustrated in this section placed special emphasis on the semantic representation of states of affairs and on the role that university lecturers and TED speakers play in them. More specifically, also in an attempt to investigate the discursive use of *we* in TED_ac in more detail, consideration has been given to all the verb collocates of this pronoun in order to understand the way in which academics speaking at TED present themselves on the stage, while describing situations involving them.

The results of the corpus-based analysis show that, sorted on the basis of the four lexical aspectual categories found in the literature (Vendler 1957 [1967]; Van Valin/LaPolla 1997), the verb collocates of *we* in MICASE_lect and TED_ac show different distributions in the two corpora. While activity, state and accomplishment verb collocates of *we* in TED_ac double the occurrences of those found in MICASE_lect, it is interesting to see that achievement verb collocates of *we* are significantly more frequent in TED_ac than in MICASE_lect (30.5 pttw vs. 11.3 pttw).

The results of the qualitative analysis aimed at exploring the usage of some of the most salient verb collocates of *we* sorted in relation to the above-mentioned lexical aspectual categories show that, as far as activities are concerned, in TED_ac verbs such as *do* and *use* – among the first ten activity verb collocates of *we* in the two corpora – are mostly used, in both the ‘hard’ and ‘soft’ subcategories of TED_ac, in order to depict activities which involve the speaker and his or her research team. In MICASE_lect the same kind of activities involve, instead, both the instructor and his or her students, the latter often participating in the speech event, while being trained in a specific discipline.

As regards states, unlike in MICASE_lect, where they metadiscursively describe situations involving the instructor and his or her students, in TED_ac some of the most frequent verb collocates of *we* belonging to this category (e.g. *have* and *be*) are mostly used by the speaker to depict situations in which some qualities are marked which link him or her to his scientific community.

With reference to accomplishments, although the verb collocates of *we* belonging to this category are the least frequent ones compared to those belonging to

the other three categories in both corpora, in TED_ac accomplishments co-occurring with *we* have been found (e.g. *build*, *develop* and *create*) which cannot be detected in MICASE_lect and are used by the speaker to depict processes culminating in outcomes s/he and his or her expert colleagues share as a result of their research activity.

Finally, as far as achievements are concerned, verb collocates of *we* belonging to this category are significantly more frequent in TED_ac than in MICASE_lect. In TED_ac, different achievements co-occurring with *we* (e.g. *find*, *discover*, *come up with* and *come away with*) are used by academic TED speakers to place emphasis on their and their collaborators' research findings, especially in the 'hard' subsection of TED_ac, where achievement verb collocates of *we* are more frequent than in the 'soft' subsection of the corpus.

All in all, in line with the results illustrated in sections 4.2 and 4.3, the analysis of the verb collocates of *we* in MICASE_lect and TED_ac has proved useful for further exploration of the pragmatic value of this pronoun in the two settings under investigation and provide evidence which shows that, unlike academics speaking in a university classroom, academic TED speakers' main communicative purpose is to build up their image as professionals, while promoting scholarship and expertise. This is thought to be one of the main, if not the main, objectives of academic TED speakers as opposed to academics speaking in a classroom.

Conclusions

The present dissertation set out to investigate the way in which academic discourse is reconceptualized through the web-mediated genre of TED talks. More precisely, consideration has been given to the way in which academics discursively introduce themselves and present knowledge in two different contexts, i.e., that of the university lecture and that of TED. A contrastive analysis of these two genres was useful in order to tease out some distinguishing features of academic TED talks and highlight the way in which academics make use of this popularizing format in order to achieve their professional objectives, such as building up their identity as experts and promoting scholarship.

Previous research on popularization discourse has mostly focused on the way in which popularizers simplify and convey specialized content to non-experts (cf. Caliendo 2012a; Gotti 2013). This was not the objective of the present study. As Kastberg (2007: 8) aptly points out, knowledge communication is “participative (interactive) and the communicative positions converge on the (co-)construction of (specialized) knowledge”. From this perspective, it would have been hard to make inferences regarding the effectiveness of specific linguistic strategies adopted by TED speakers to favor knowledge transfer as TED talks are monologic speech events.

In spite of its language-centered approach, this study has a marked sociological intent and its aim was to provide empirical evidence to show that TED talks lend themselves as a new pragmatic setting within which practices of knowledge dissemination evolve and get contaminated by other discursive practices according to the conventions of today’s “knowledge-based economy” (OECD 1996) as well as to the norms of a “professional culture” (Bhatia 2012). To this end, the following research questions were established:

- (1) Which communicative purposes do academics attempt to achieve by drawing on TED talks?
- (2) How do academic TED speakers present themselves discursively on the TED stage?

- (3) How do they present knowledge and states of affairs according to their communicative purposes as well as conforming to the conventions of the genre under scrutiny?

In order to tackle the above research questions, a contrastive discourse analysis was carried out by building up and comparing a corpus of TED talks delivered by academics (the TED_ac corpus) to a corpus of university lectures (the MICASE_lect corpus) drawn from the *Michigan Corpus of Academic Spoken English* (MICASE) (cf. Chapter 3).

On the one hand, these two genres share a number of features – in both contexts experts address an audience of (semi) lay people by making use of different semiotic modes – while, on the other, they differ in their inherent purpose: unlike TED talks – whose aim (among others) is to provide a ‘smart’ form of entertainment – university lectures have to be regarded as “pedagogic texts” given that their main aim is to “provide students with the ‘secondary’ culture (Widdowson 1979) expected among scholars in the discipline” (Gotti 2013: 9). Against this background, a comparison with university lectures was useful in order to detect and highlight some distinguishing features of academic TED talks.

Drawing on the theories of ESP and EAP, studies on the genre of the university lecture (e.g. Rounds 1987a, 1987b; Hyland 1998; Fortanet 2004, 2006; Artiga León 2006; Hyland 2009a, 2009b) were used as a starting point for the contrastive analysis of academic TED talks and university lectures (cf. Chapter 3-4).

With reference to question (2), attention was paid to the distribution and usage of first and second person pronouns in TED_ac and MICASE_lect, placing special emphasis on the pronoun *we* – this being significantly more frequent in TED_ac than in MICASE_lect.

As far as the usage of the pronoun *we* in TED_ac is concerned, evidence suggested that this is predominantly used with a “speaker + other people” referential function (Fortanet 2004), thus excluding the audience (e.g. “*we* have a tool that actually helps us out in this study”). In MICASE_lect, on the contrary, the pronoun *we* mostly refers to the speaker (substituting the pronoun *I*) and allows him or her to establish involvement with the students during the communicative exchange (Fortanet 2004: 58)

(e.g. “what *we*’re gonna do, in, today’s lecture [...] *we*’re going on to biopsychology”). In MICASE_lect *we* is mostly used by academics with a “metadiscourse function” in order to guide the hearer through the speech event (cf. Fortanet 2004; Bamford 2009). In TED_ac, instead, the pronoun *we* mostly has a “representation-of-group function” and is used by the speaker in order to mark his or her belonging to a group of researchers. In so doing, academic TED speakers show that their main concern is to build up their image as experts as well as to promote their research and scholarship. This validates the hypothesis that TED talks lend themselves as a new pragmatic setting where academics attempt to achieve their ‘private’ objectives. By presenting themselves as reliable sources of knowledge, in fact, not only is there a higher probability that speakers gain credibility in the eyes of their audience, but this could also be reasonably regarded as a way through which the TED format attempts to legitimize itself and its informative intent.

With reference to question (3), special attention was paid to the usage of epistemic lexical verbs (ELVs) in TED_ac and MICASE_lect, in order to understand the way in which academics convey their “epistemic stance” (Conrad/Biber 2000), i.e., comment on the knowledge status of the information (e.g. degree of certainty/uncertainty) by making reference to the evidence source of information. To this end, particular emphasis has been placed on the verbs *see*, *show*, *know* and *think*, the four most frequent ELVs in the two corpora under scrutiny.

As far as the verb *see* is concerned, evidence has suggested that, while in MICASE_lect it mainly works as a verb of cognition – through which the hearer is invited to make a mental effort to picture a state of affairs or a process in his or her mind – In TED_ac, on the contrary, *see* mainly works as a verb of sensory perception, through which the hearer is invited to focus on a visual support through which knowledge is conveyed. In TED talks both *see* and *show* stress the highly multimodal quality of the new genre, as these verbs are widely used to index the visible and tangible sources of knowledge being presented to the audience, therefore greatly increasing the degree of reliability of the information provided.

As regards *know* and *think*, evidence has suggested that in both MICASE_lect and TED_ac they work as cognitive verbs and express a judgmental stance on the part of the speaker. However, unlike in MICASE_lect, in TED_ac the speculative source of

knowledge encoded by *know* and *think* often corresponds to a whole group of experts the speaker associates her/himself with by means of the pronoun *we*. This means that, though excluding the lay hearer, experts attempt to acquire a certain degree of credibility in the eyes of their audience as consolidated members of a scientific research group.

Finally, in order to identify some further distinguishing features of academic TED talks, special emphasis was placed on the notion of *Aktionsart* (Vendler 1957 [1967]; Van Valin/LaPolla 1997; Croft 2012), as this was found useful for further exploration of the use of the pronoun *we* on the part of academics to present themselves and depict “states of affairs” (Van Valin/LaPolla 1997) in the two contexts under scrutiny on the basis of the speaker’s communicative purposes and the conventions of the genre s/he draws on.

First of all, the results of the corpus-based analysis showed that the verb collocates of *we* in MICASE_lect and TED_ac show different distributions in the two corpora with reference to the four lexical aspectual categories found in the literature (Vendler 1957 [1967]; Van Valin/LaPolla 1997). While activity, state and accomplishment verb collocates of *we* in TED_ac double the occurrences of those found in MICASE_lect, achievement verb collocates of *we* are significantly more frequent in TED_ac than in MICASE_lect (30.5 pttw vs. 11.3 pttw).

Secondly, the results of the qualitative analysis aimed at exploring the usage of some of the most salient verb collocates of *we* in the two corpora under investigation showed that, as far as activities are concerned, in TED_ac verbs such as *do* and *use* – among the first ten activity verb collocates of *we* in the two corpora – are mostly used in order to depict activities involving the speaker and his or her research team. This is true in both the ‘hard’ and ‘soft’ subcategories of TED_ac. In MICASE_lect the same kind of activities involve both the instructor and his or her students, the latter often participating in the speech event, while being trained in a specific discipline.

As regards states, unlike in MICASE_lect, where they metadiscursively describe situations involving the instructor and his or her students, in TED_ac some of the most frequent verb collocates of *we* belonging to this category (e.g. *have* and *be*) are mostly used by the speaker to depict situations in which some qualities are marked which link him or her to his scientific community.

With reference to accomplishments, in TED_ac verb collocates of *we* belonging to this category have been found (e.g. *build*, *develop* and *create*) which cannot be detected in MICASE_lect and are used by the speaker to depict processes culminating in outcomes s/he and his expert colleagues share as a result of their research activity.

Finally, as far as achievements are concerned, in TED_ac verb collocates of *we* belonging to this category are significantly more frequent in TED_ac than in MICASE_lect. In TED_ac, different achievements co-occurring with *we* (e.g. *find*, *discover*, *come up with* and *come away with*) are used by academic TED speakers to place emphasis on their and their collaborators' research findings, especially in the 'hard' subsection of the corpus.

To conclude, the analysis of academic TED talks proved to be useful in an attempt to provide an account of a social context where the science system has a prerequisite need to assert its primacy in the production and dissemination of knowledge. The results illustrated in Chapter 4 showed that – despite their declared informative purpose – TED talks differentiate from university lectures working as an alternative pragmatic space, where academics build up their image as experts by (a) laying stress on their affiliation to a community of experts and (b) promoting their group's research and findings, which are discursively presented as tangible and highly reliable. These moves are essential for academics to preserve the 'prestige' of their profession and, above all, in order to persuade fund providers of the worthiness of their projects and research.

In order to understand the extent to which academics speaking at TED manage to convey expertise and scholarship, it would have been necessary to explore the reception of TED talks. This could have been done, for instance, by carrying out an analysis of the TEDBlog, but this is beyond the scope of the present study.

My purpose was rather to explore the way in which academic TED speakers make use of language on the TED stage in order to make inferences on the reconceptualization of academic discourse via a web-mediated form of popularization (i.e. TED talks). More precisely, my intent was to understand to what extent academics speaking at TED and academics speaking in a university classroom differ in their communicative purposes.

From a wider perspective, this study has tried to show that, in order to provide a detailed description of popularization discourse, attention needs to be paid primarily to the communicative purposes of texts, in that popularization discourse increasingly contributes to the emergence of new and hybrid genres, within which different discursive practices contaminate as a result of social transformations (cf. Caliendo 2012a).

Furthermore, this study attempted to show that, given its interdisciplinary agenda, corpus-assisted discourse analysis lends itself very well to gauge social change, while providing empirical support which shows that language is the main tool through which social actors achieve their purposes. To this end, the theoretical support of GA was also essential. Moving on from the more traditional versions of genre analysis (Swales 1990, 2004; Bhatia 1993, 2004) to the most recent approach of Critical Genre Analysis (CGA) (Bhatia 2007, 2012), this study, in fact, set out to investigate the interdiscursive nature of academic TED talks, showing that, in some cases, content simplification per se is not the main, or at least not the only, communicative purpose of popularizations.

Returning to the comparison of academic TED talks *vis-à-vis* university lectures, it must be specified that two of the main limits of this study are (1) the fact that the results illustrated and discussed in it refer to the analysis of two circumscribed corpora of spoken language as well as (2) the fact that – although combining both quantitative and qualitative methods in the attempt to safeguard the importance of context – data analyses are dependent upon the subjective interpretation of the researcher. Against this background, replicability is called for in order to test the consistency of the results.

In addition to this, a number of options lie open before us for future research on academic TED talks. The enlargement of the TED_ac corpus, for instance, might be advisable in order to (a) explore whether the trends highlighted in this study persist diachronically or (b) to point out new salient traits of academic TED talks compared to university lectures.

Moreover, in order to provide further evidence which shows that TED talks serve as a ‘tool’ for academics to accomplish their professional objectives – also in line with the comparison between academic TED talks and the more ‘traditional’ genre of university lectures – a new contrastive analysis could be carried out by comparing

academic TED talks to a new spoken academic genre such as that of the conference presentation (cf. Mauranen 2013). Unlike TED talks and university lectures, in conference presentations speakers address an audience of peers. This is a fundamental difference that might help to highlight further distinguishing features of academic TED talks. To this end, further research could be carried out by drawing, for instance, on the corpus of *English as a Lingua Franca in Academic settings* (ELFA), a corpus collecting different types of academic speech events, also including conference presentations.

Additionally, in order to contextualize the results obtained by comparing TED_ac to the genres of the university lecture and the conference presentation, further research could be carried out to understand whether the discursive features detected in TED_ac can also be identified in TED talks when the speaker is neither an academic nor necessarily an expert. This would make it possible to understand whether the discursive features detected in TED_ac derive from the conventions of the professional category speakers belong to or whether they are attributable to the TED genre in general. Further research in this direction could be carried out by making use of TED_ref as a reference corpus (cf. Chapter 3).

Finally, also in an attempt to contextualize the results obtained by comparing academic TED talks to other academic genres (as well as to TED talks delivered by other kinds of professionals), further research could be carried out by comparing the genre of TED talks to other popularizing spoken genres (e.g. TV and radio programs). To pursue this aim, the spoken section of the *Corpus of Contemporary American English* (COCA), for instance, could be used for comparison.

In order to undertake a systematic approach, the scope of this study was narrowed down by focusing on the way in which a specific professional category, i.e., that of academics, makes use of TED, while the analysis was limited to verbal language only. However, the TED format is far more complex than this: it encompasses a variety of experts, it addresses multiple audiences at multiple levels and, as a digital platform, it mixes different semiotic modes drawing on different channels. Against this backdrop, exploring the way in which academic discourse is reconceptualised through TED talks was only a means to place emphasis on an innovative genre that can be explored from different perspectives and by drawing on different methods.

Appendices

Verb collocates of *we* in TED_ac and MICASE_lect

Appendix A

Frequencies of verb collocates of *we* in MICASE_lect ‘hard’ and ‘soft’ science lectures⁵⁴

N	‘hard’ science lectures			‘soft’ science lectures		
	Lemma	Occ.	Freq. ptw	Lemma	Occ.	Freq. ptw
1	have	173	10.3	have	169	9.3
2	do	72	4.2	see	80	4.4
3	talk	67	4	know	53	3
4	see	61	3.6	get	50	2.7
5	know	60	3.5	talk	49	2.7
6	get	50	3	do	44	2.4
	look/look					
7	at/up	40	2.3	call	30	1.6
8	say	35	2	want	28	1.5
9	need	32	2	think	27	1.4
10	call	31	1.8	look at/down	22	1
11	use	28	1.6	say	19	1
12	measure	27	1.6	be	17	1
13	find	25	1.5	need	17	1
14	think	25	1.5	find	12	0.6
15	want	24	1.4	start	12	0.6
16	start	21	1.2	use	12	0.6
17	take	18	1	like	11	0.6
	go ⁵⁵ /go					
	across/					
18	around/	17	1	discuss	10	0.05
	back/					
	through/up					
19	put	17	1	go	9	0.4
20	be	15	0.8	make	9	0.4
21	assume	12	0.7	mention	9	0.4
22	make	12	0.7	try	9	0.4
23	define	10	0.5	begin	8	0.4
24	get into	8	0.4	read	8	0.4
25	write	8	0.4	take	8	0.4
26	add	7	0.4	live	7	0.3
27	consider	7	0.4	ask	6	0.3
28	cover	6	0.3	let	6	0.3
29	get to	6	0.3	comply with	5	0.2
30	change	5	0.2	put	5	0.2
31	end	5	0.2	understand	5	0.2
32	generate	5	0.2	believe	4	0.2
33	comapre	4	0.2	expect	4	0.2
34	expect	4	0.2	explain	4	0.2

⁵⁴ Verb collocates of *we* in MICASE_lect and TED_ac have been sorted on the basis of the four Vendlerian (1957[1967]) lexical aspectual categories (i.e. **States**, **Activities**, **Accomplishments**, and **Achievements**)

⁵⁵ Uses of ‘go’ in ‘here/there we go’ have been discarded

35	set	4	0.2	figure out	4	0.2
36	tend	4	0.2	give	4	0.2
37	address	3	0.1	move	4	0.2
38	believe	3	0.1	promise	4	0.2
39	come back	3	0.1	care	3	
	to					0.1
40	come to	3	0.1	come to	3	0.1
41	exchange	3	0.1	construct	2	0.1
42	go into	3	0.1	deal with	2	0.1
43	like	3	0.1	find out	2	0.1
44	swap	3	0.1	leave	2	0.1
45	be at	2	0.1	sample	2	0.1
46	give	2	0.1	show	2	0.1
				take for		
47	look for	2	0.1	granted	2	0.1
48	step	2	0.1	tell	2	0.1
49	understand	2	0.1	come into	1	0.05
				make an		
50	be far from	1	0.05	assumption	1	0.05
				make a		
51	get out	1	0.05	decision	1	0.05
52	get over	1	0.05	make into	1	0.05
53	get rid of	1	0.05	make sure	1	0.05
				take account		
54	show	1	0.05	of	1	0.05
55	-	-	-	take a look	1	0.05
56	-	-	-	take into	1	0.05
				effect		
				take note of	1	0.05
57	-	-	-			
58	-	-	-	take over	1	0.05

Appendix B

Frequencies of verb collocates of *we* in TED_ac ‘hard’ and ‘soft’ science talks

N	‘hard’ science talks			‘soft’ science talks		
	Lemma	Occ.	Freq. pttw	Lemma	Occ.	Freq. pttw
1	have	404	12	have	232	10.5
2	do	272	8.1	do	151	7
3	know	261	7.8	see	122	5.5
4	see	259	7.7	be	110	5
5	take	214	6.4	know	109	5
6	find	171	5	need	104	4.7
7	think	148	4.4	think	103	4.6
8	be	140	4.2	want	78	3.5
9	need	138	4	make	62	2.8
10	get	134	4	go/go to	58	2.6

11	want	116	3.4	get	56	2.5
	look/look ahead/ around/					
12	at/to/forward in/into/inside / out/down	107	3.2	look/look at	56	2.5
13	call	94	2.8	find	43	2
14	make	90	2.7	use	41	1.8
15	use	89	2.6	start	38	1.7
16	start	84	2.5	take	37	1.6
	go/ go ahead/aroun d/ back (to)/ down/throug h/ (up) to					
17		71	2.1	learn	30	1.3
18	understand	56	1.6	call	28	1.2
19	put	54	1.6	ask	27	1.2
20	say	42	1.2	like	23	1
21	learn	38	1.1	try	20	1
22	talk	35	1	understand	18	0.8
23	live	33	0.9	feel	17	0.7
24	figure	31	0.9	live	17	0.7
25	try	31	0.9	believe	16	0.7
26	work	30	0.9	share	16	0.7
27	build	27	0.8	tell	15	0.6
28	change	27	0.8	care	14	0.6
	go back (to)/ forward/in/ into/onto/ out					
29		26	0.7	create	13	0.5
30	study	26	0.7	figure	13	0.5
31	ask	24	0.7	hear	13	0.5
32	get to	24	0.7	choose	12	0.5
33	measure	24	0.7	decide	12	0.5
34	bring	23	0.6	design	12	0.5
35	fly	23	0.6	pay	12	0.5
36	give	23	0.6	get to	11	0.4
37	like	23	0.6	watch	11	0.4
38	move	21	0.6	change	10	0.4
39	create	20	0.6	spend	10	0.4
40	hear	20	0.6	allow	9	0.4
41	be able to	18	0.5	be able to	9	0.4
42	believe	18	0.5	deal with	9	0.4
43	discover	18	0.5	begin	8	0.3
44	run	18	0.5	be in	8	0.3
45	be in/on	16	0.4	bring	8	0.3
46	play	16	0.4	evolve	8	0.3
47	spend	15	0.4	keep	8	0.3

48	test	15	0.4	realize	8	0.3
49	begin	14	0.4	recognize	8	0.3
50	predict	14	0.4	study	8	0.3
51	tell	14	0.4	test	8	0.3
52	collect	13	0.3	become	7	0.3
53	keep	13	0.3	expect	7	0.3
54	share	13	0.3	lose	7	0.3
55	design	12	0.3	numb	7	0.3
56	show	12	0.3	reach	7	0.3
57	treat	12	0.3	run	7	0.3
58	decide	11	0.3	seem	7	0.3
59	develop	11	0.3	turn to	7	0.3
60	face	11	0.3	come up	6	
				with		0.2
61	write	11	0.3	develop	6	0.2
62	add	10	0.3	love	6	0.2
63	detect	10	0.3	send	6	0.2
64	realize	10	0.3	solve	6	0.2
65	produce	9	0.2	dislike	5	0.2
66	recognize	9	0.2	end up	5	0.2
67	be at	8	0.2	engage	5	0.2
	come up					
68	with	8	0.2	explain	5	0.2
69	expect	8	0.2	hate	5	0.2
70	solve	8	0.2	let	5	0.2
71	divide	7	0.2	open	5	0.2
72	eat	7	0.2	remember	5	0.2
73	explain	7	0.2	sort	5	0.2
74	follow	7	0.2	stop	5	0.2
75	forget	7	0.2	buy	4	0.1
76	leave	7	0.2	come to	4	0.1
77	look for	7	0.2	consume	4	0.1
78	manage	7	0.2	encourage	4	0.1
79	protect	7	0.2	go in/out	4	0.1
80	reduce	7	0.2	grow	4	0.1
81	stop	7	0.2	increase	4	0.1
82	watch	7	0.2	interact	4	0.1
83	wonder	7	0.2	move	4	0.1
84	apply	6	0.1	pick	4	0.1
85	calculate	6	0.1	play	4	0.1
86	carry	6	0.1	predict	4	0.1
87	fail	6	0.1	read	4	0.1
88	generate	6	0.1	forget	3	0.1
89	kill	6	0.1	get in/into	3	0.1
90	lose	6	0.1	listen	3	0.1
91	notice	6	0.1	look up to	3	0.1
92	observe	6	0.1	set up	3	0.1
93	publish	6	0.1	teach	3	0.1
94	seem	6	0.1	tend	3	0.1
95	speak	6	0.1	pretend	3	0.1

96	come	5	0.1	wonder	3	0.1
97	come to	5	0.1	work out	3	0.1
98	continue	5	0.1	accept	2	0.1
99	end	5	0.1	cheat	2	0.1
100	get					
	in/into/inside	5	0.1	come back	2	0.1
101	grow	5	0.1	come in	2	0.1
102	imagine	5	0.1	control	2	0.1
103	inject	5	0.1	hope	2	0.1
104	let	5	0.1	imagine	2	0.1
105	mean	5	0.1	mean	2	0.1
106	owe	5	0.1	move	2	0.1
				forward		
107	pick	5	0.1	pay attention	2	0.1
108	prevent	5	0.1	come	1	0.04
109	worry	5	0.1	fear	1	0.04
110	activate	4	0.1	get around	1	0.04
111	assume	4	0.1	get farther	1	0.04
112	compare	4	0.1	get out of	1	0.04
113	deal with	4	0.1	get together	1	0.04
114	feel	4	0.1	go for	1	0.04
115	lie	4	0.1	go on	1	0.04
116	love	4	0.1	look for	1	0.04
117	record	4	0.1	move up	1	0.04
118	reverse	4	0.1	process	1	0.04
119	tag	4	0.1	respect	1	0.04
120	age	3	0.09	set out to	1	0.04
121	answer	3	0.09	set about to	1	0.04
122	choose	3	0.09	turn	1	0.04
				turn away		
123	close	3	0.09	from	1	0.04
124	explore	3	0.09	turn into	1	0.04
	get (away)					
125	from	3	0.09	-	-	-
126	hit	3	0.09	-	-	-
127	open	3	0.09	-	-	-
128	scale	3	0.09	-	-	-
129	slow	3	0.09	-	-	-
130	track	3	0.09	-	-	-
131	turn	3	0.09	-	-	-
132	turn into	3	0.09	-	-	-
133	view	3	0.09	-	-	-
134	walk	3	0.09	-	-	-
135	come from	2	0.06	-	-	-
136	evolve	2	0.06	-	-	-
137	get at	2	0.06	-	-	-
	get away					
138	with	2	0.06	-	-	-
139	get in touch	2	0.06	-	-	-
140	get (out) of	2	0.06	-	-	-

141	heat	2	0.06	-	-	-
142	make sure	2	0.06	-	-	-
143	order	2	0.06	-	-	-
144	process	2	0.06	-	-	-
145	recall	2	0.06	-	-	-
146	require	2	0.06	-	-	-
147	sample	2	0.06	-	-	-
148	turn off	2	0.06	-	-	-
149	turn on	2	0.06	-	-	-
150	turn to	2	0.06			
	come away					
151	with	1	0.03	-	-	-
152	come out of	1	0.03			
153	cool	1	0.03	-	-	-
154	get back to	1	0.03	-	-	-
155	get sthg.					
	back	1	0.03	-	-	-
156	get rid of	1	0.03	-	-	-
157	get up	1	0.03	-	-	-
158	go about	1	0.03	-	-	-
159	go along	1	0.03	-	-	-
160	go by	1	0.03	-	-	-
161	go over	1	0.03	-	-	-
162	hand	1	0.03	-	-	-
163	look forward					
	to	1	0.03	-	-	-
164	make out	1	0.03	-	-	-
165	make sense	1	0.03	-	-	-
166	shape	1	0.03	-	-	-
167	team	1	0.03	-	-	-
168	turn by	1	0.03	-	-	-

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