SITUATIONAL VARIATION IN NON-NATIVE COMMUNICATION

Studies into register variation, discourse management and pronunciation in Spanish English

ISBN 978-90-76203-73-7

Cover artwork "Colourful Chameleon" by Meg Ashford | http://megashford.com/

Invitation artwork "Philips II beschuldigt prins Willem van Oranje te Vlissingen bij zijn vertrek uit de Nederlanden in 1559" by Cornelis Kruseman, 1832

Printed and bound by Ipskamp Drukkers, Nijmegen

SITUATIONAL VARIATION IN NON-NATIVE COMMUNICATION

Studies into register variation, discourse management and pronunciation in Spanish English

Proefschrift

ter verkrijging van de graad van doctor
aan de Radboud Universiteit Nijmegen
op gezag van de rector magnificus,
volgens besluit van het college van decanen
in het openbaar te verdedigen op woensdag 10 februari 2016
om 14.30 uur precies

door
Elbert Huib Kouwenhoven
geboren op 21 juli 1986
te Zwolle

Promotoren	Prof. dr. Margot van Mulken
	Prof. dr. Mirjam Ernestus

Manuscriptcommissie

Prof. dr. Roeland van Hout (chair)	
Prof. dr. Kees de Bot	Rijksuniversiteit Groningen
Prof. dr. Jean-Marc Dewaele	Birkbeck, University of London (Verenigd Koninkrijk)
Prof. dr. Ans van Kemenade	
Dr. Francisco Torreira	Max Planck Instituut voor Psycholinguistiek, Nijmegen

SITUATIONAL VARIATION IN NON-NATIVE COMMUNICATION

Studies into register variation, discourse management and pronunciation in Spanish English

Doctoral Thesis

to obtain the degree of doctor
from Radboud University Nijmegen
on the authority of the Rector Magnificus,
according to the decision of the Council of Deans
to be defended in public on Wednesday, February 10, 2016
at 14.30 hours

by
Elbert Huib Kouwenhoven
Born on July 21, 1986
in Zwolle (The Netherlands)

Supervisors	Prof. dr. Margot van Mulken
	Prof. dr. Mirjam Ernestus

Doctoral Thesis Committee

Prof. dr. Roeland van Hout (chair)	
Prof. dr. Kees de Bot	University of Groningen
Prof. dr. Jean-Marc Dewaele	Birkbeck, University of London (UK)
Prof. dr. Ans van Kemenade	
Dr. Francisco Torreira	Max Planck Institute for Psycholinguistics, Nijmegen

Contents

1 One

Uno

Een

Introduction

Multiple forces have propelled English into the position of the largest and most widely used language for international communication in the world today. Whereas such a position was merely a theoretical possibility in the 1950s (Crystal, 2012), English is now undeniably essential to international, worldwide communication: it has become "the first world language in human history" (Gnutzmann, 2000, p. 357). The explanation for this dominance is twofold: while its origins lie in the expansion of the British empire, which established English as an official language in many parts of the world, even after colonialized countries gained independence, socio-cultural developments have maintained and developed the dominant position of English (see e.g. Crystal, 2012; Gnutzmann, 2000). Nowadays, this dominance transcends the boundaries of the countries in which English is used as an official language (see Kachru's (1992) 'inner', 'outer' and 'expanding' circles), and also includes countries in which English holds no official status, but where it is used for international communication (see e.g. Seidlhofer, 2004).

The European context is illustrative of the dominance of English as an international language (see the Eurobarometer 386 of June 2012, the source for the numbers and percentages in this paragraph). English is the most widely spoken foreign language in the 19 EU member states in which it is not an official language (i.e. excluding the UK and Ireland). Thirty-eight percent of all EU citizens claim to speak English well enough to be able to have a conversation in English – and given the way in which this question was formulated, we may safely assume that the percentage of EU citizens having basic knowledge of English is much higher. In comparison, only 12% of the EU citizens state that they speak French, the next language in this list, well enough to have a conversation. Sixty-seven percent of the EU citizens placed English among the two languages other than their mother tongue that they deemed most useful for their personal development.

Given these numbers of non-native speakers of English and their attitudes towards the usefulness of English, it is likely that English will keep its position as the global *lingua franca* (see e.g. Crystal, 2012; De Swaan 2001). De Swaan (2001; see also Calvet, 1999) compares today's global linguistic system to a solar system, with English at its center. According to De Swaan (2001), English holds this place due to its high 'q-value', which is a measure of a language's 'prevalence' (i.e. the total number of speakers of the language) and its 'centrality' (i.e. the number of speakers of the given language who also know other languages, thereby allowing for indirect communication with groups of people). De Swaan (2001) proposes that the individual language user who wants to communicate, directly or indirectly, with the largest number of speakers will invest in acquiring the language with the largest q-value: English. Moreover, with each new user of English as an additional language, both its prevalence and its centrality rise, hence augmenting its q-value.

Historically, other languages have had great international status, but these languages were never as omnipresent as English is today. For instance, Latin was used by the clergy in the catholic church and French was used by members of the elite as the language of international diplomacy (Gnutzmann, 2000). In contrast, not only has English spread geographically to be used on a global scale, its use also disseminated into many different layers of society and into many different speech situations ranging "from extremely basic and rudimentary communication exchanges to very elaborate linguistic forms of expression" (Gnutzmann, 2000, p. 357): tourists interact with local market vendors in English when they are on holiday, international students use English to talk to each other in dorms and at parties, academics present their research in English at international conferences, politicians discuss global issues in English and businessmen negotiate contracts in English. Furthermore, the same speakers may come to use English in different speech situations: a businessman who is in a negotiation today may be a tourist tomorrow.

In short, English has reached an "unprecedented globality [and] it is encountered and used in more places than any other language, even if there are no native speakers present" (Haberland, 2001, p. 939). As a consequence, many non-native (L2) speakers use English in a large variety of situations. The question then arises how L2 users of English cope with this variety of speech situations in which they come to use their L2. In this thesis I investigate non-natives' linguistic behavior in different speech situations. The main question that I address is: *how does situational context affect lingua franca communication among non-native speakers of English*?

Lingua franca and its speakers

When speakers who do not share a native language want to communicate with each other, they may use a vehicular language that they both understand. Such a language is often referred to as 'lingua franca', by analogy to the trade or contact language that was developed in the Mediterranean in the Middle Ages, and which was based on Italian vocabulary and syntax, but with major contributions from other languages, such as Arabic and Turkish (see e.g. Haberland, 2011). Nowadays, a lingua franca is usually defined as "[a] language that is used as a medium of communication between people or groups of people each speaking a different native language" (Gnutzmann, 2000, p. 356). Following this definition any (natural) language can be used as a lingua franca.

According to Haberland (2011), the original lingua franca had no native (L1) speakers. The situation is different for English, which does have native speakers[1]. Nevertheless, communication in English most often does not include any native speakers of

[1] Some scholars within the English as a lingua franca paradigm would posit that lingua franca English "is not the same as English as a Native Language […], and must therefore be 'additionally acquired' by [native speakers of English] too (albeit that their starting point renders the task easier)" (Jenkins, Cogo & Dewey, 2011, p. 283).

English at all. Instead, English is most often used for communication between non-natives only. Almost 25 years ago, Beneke (1991, cited by Gnutzmann, 2000; Haberland, 2011; Seidlhofer, 2004) estimated that 80% of all verbal interactions in English involve only non-native speakers. This percentage seems likely to have risen since (see e.g. De Swaan, 2011).

The English that is used in situations involving only non-native speakers may be referred to as "ELF [English as a lingua franca] in its purest form" (Seidlhofer, 2004, p. 211). This thesis studies such pure ELF communication. Since I focus on dyadic communication between two non-native speakers of English, I use Firth's (1996) narrow definition of ELF as "a 'contact language' between persons who share neither a common native tongue nor a common (national) culture, and for whom English is the chosen *foreign* language of communication" (p. 240; italics in original).

Non-native speakers: L2 users and L2 learners

Following Firth's (1996) definition, ELF is a foreign contact language. This implies that the focus is on non-native speakers of English whose primary objective is to make contact in English, not to develop their language skills, for example. This realization influences whether non-native speakers are seen as L2 learners or as L2 users (see e.g. Cook, 2002).

Research from a Second Language Acquisition (SLA) perspective investigates non-native speakers' linguistic development over time, or their capabilities at a certain moment in time or at a certain proficiency level. From a traditional SLA point of view, an L2 learner's ultimate goal is to become proficient in a 'target language' (see e.g. Selinker, 1972) as measured by the attainment of some (native-speaker) norm in the target language. Selinker (1972) notes, however, that most second language learners "will *not* 'succeed'" (p. 213, italics in original) in attaining native speaker competence in the target language. He introduces the term 'interlanguage' to describe a "separate linguistic system based on the

observable output which results from a learner's attempted production of a [target language] norm" (p. 214). Interlanguage is thus implicitly defined by its deviance from native speakers' linguistic output. According to Seidlhofer (2004), "virtually all SLA research operates with a native-speaker model and tends to construct nonnative speakers as defective communicators" (p. 213).

In sharp contrast to the traditional SLA point of view, the ELF paradigm takes a radically different position towards L2 speakers of English: "they are not […] 'failed native speakers' [but] highly skilled communicators who make use of their multilingual resources […] and who are found to prioritize successful communication over narrow notions of 'correctness'" (Jenkins et al., 2011, p. 284). This view disqualifies the use of the term 'L2 learner', since speakers of ELF are considered to perform adequately, and without being concerned with some future (native) competence in English. Rather, scholars in the ELF paradigm consider ELF speakers 'L2 users'. Since the core focus of the ELF paradigm is to study ELF in its own right, instead of comparing it with native benchmarks (see e.g. Jenkins et al., 2011; Seidlhofer, 2004), it is possible to consider L2 users of English to be just as competent in ELF as native speakers of English.

In fact, L2 users of English may have developed parts of their 'communicative competence' (Canale & Swain, 1980, p. 6) more strongly compared to L1 users of English. Canale and Swain (1980) divide 'communicative competence' into 'grammatical competence', i.e. knowledge of the rules of grammar, and 'sociolinguistic competence', i.e. knowledge of the rules of language use. In lingua franca communication, 'intercultural competence' may also play a role (for an overview of different approaches to this concept, see Spencer-Oatey, 2010). Whereas native English ELF speakers' grammatical and sociolinguistic competences typically are fully developed, they may have a less well developed intercultural competence. In contrast, L2 users of English generally have less

developed grammatical competence, and possibly also less developed sociolinguistic competence in their second language, but they may compensate for this by a well developed intercultural competence.

In consequence, native speakers of English may have a false sense of superiority in lingua franca communication due to their 'native speakerism' (Gnutzmann, 2000, p. 358). Native speakers of English may not be fully aware of the amount of cooperation that is required in lingua franca communication. Cooperation is very basic in communication (see Grice's, 1975, 'Cooperative Principle') and may be rather effortless in L1-L1 communication, due to a relatively large common ground. Since native speakers of English can rely on their native language during ELF communication, they may falsely assume such common ground and only adapt their language to non-native interlocutors to a limited degree, or if they are aware of potential problematic language use, such as idiomatic expressions, they may lack the skills to adapt their language to non-native interlocutors (see e.g. Louhiala-Salminen & Kankaanranta, 2012; Sweeney & Hua, 2010). As a consequence, native speakers of English are not necessarily the most successful speakers of ELF.

Some scholars have claimed that non-native users of English are particularly successful in ELF because they are well aware of their own and their interlocutors' non-nativeness (see e.g. Mauranen, 2006). As a consequence, they are prepared for the possibility of miscommunication and cooperate in such a way that actual miscommunication, i.e. where the intended meaning does not come across, is rare (Mauranen, 2006; Björkman, 2011, 2014). ELF scholars tend to highlight this kind of findings in order to emphasize the communicative competence of non-native speakers of English (see also Jenkins et al., 2011; Seidlhofer, 2004): while non-native users of English sometimes rely on language that may be ungrammatical from a normative, native speaker point of view, they tend to be successful communicators.

Based on non-native speakers' successfulness, some ELF scholars go as far as to say that the term 'non-native speaker' is offensive towards individual speakers of L2 English, since it opposes non-natives to natives, with the latter being norm-defining, and the former failing to comply to the norms (see e.g. Jenkins, 2000). For instance, Jenkins (2000) proposes to use the terms 'monolingual English speakers', 'bilingual English speakers' and 'non-bilingual English speakers'. Jenkins' notion of 'bilingual English speaker' covers native speakers of English who speak another language fluently, and speakers with a different mother tongue who speak English fluently. In contrast, the 'non-bilingual English speaker' speaks at least two languages (possibly fluently), but not fluent English. The distinction thus hinges mainly on the notion of fluency, which is both difficult to grasp and inherently carries a value judgment towards speakers in the non-bilingual group who are said not to be fluent in English. In my opinion, these terms complicate the matter drastically, creating artificial groupings. Moreover, inevitably, all terminology is more positive towards one group of speakers than to some other group of speakers in a way similar to the terms native and non-native speaker.

Therefore, although I agree that ELF speakers show great creativity and a remarkable capacity to communicate successfully, I will use terms such as 'non-native speaker' and 'L2 user' interchangeably to refer to those speakers who have not acquired English as their mother tongue but as an additional language. To me, neither of these terms holds a value judgment, nor do they imply that non-native speakers are less capable than native speakers of English in international communication. My perspective on the L2 users of English under study in this thesis largely coincides with that taken by ELF scholars: I investigate their language behavior in its own right, without labeling deviations from native norms as failed attempts at complying with these norms. Wherever I compare non-native with native

language use, this is purely for the sake of providing a clear frame of reference for my findings.

The opposition between native and non-native speakers may also reflect the individual L2 speakers' perceptions of their own situation. I believe that when scholars merely highlight instances of successful communication in the linguistic output of ELF speakers, they leave important characteristics of non-nativeness overlooked. L2 users' awareness of their own non-nativeness not only comes with a strong ability to cope with potential misunderstandings, it also leads to feelings of insecurity. Jenks (2013), for instance, shows that ELF speakers themselves are well aware of their non-nativeness in identity construction and may even use and emphasize their identities as *learners* of English during ELF communication. Moreover, Swan (2012) points out that individual speakers of ELF may very well appreciate getting feedback when they speak English and would be surprised if they were told they do not make mistakes, even though they manage to communicate their intended meaning in real-life situations. Pavlenko's (2003) journal paper title "I never knew I was a bilingual" is also illustrative in this respect, just as my own finding that speakers are less self-confident in their L2 than in their L1 (see Kouwenhoven & Van Mulken, 2012).

Register variation: the influence of situational context on language

Some studies suggest that L2 self-confidence is closely related to L2 users' abilities to adapt their language to the speech situation, or their lack thereof. Tange and Lauring (2009), for example, found that employees in a multilingual company withdraw from informal communication in English by fear of revealing linguistic weaknesses during non-essential small talk. Two negative consequences arose from this situation. First, the communication in the organization became more formalized, leaving less room for socialization, hence harming the coherence and integration within the organization. Secondly, groups of speakers clustered around a shared mother tongue to communicate informally, which disallowed speakers of

other L1s access to vital information that was not provided through formal channels in English (see also Bourdieu, 1991).

While Tange and Lauring (2009) found that speakers who have difficulties with informal speech may be left out, the formal work environment may also require linguistic adaptation to the professional context. For instance, Louhiala-Salminen and Kankaanranta (2012) state that without knowledge of the "professional vocabulary and genre-specific practices everyday work could not be done" (p. 266). In short, the ability to adapt language to the speech situation is valuable to L2 users of English

Although situational variation is important for non-native speakers, research that focuses on the influence of the speech situation on L2 language is scarce. The studies that do exist usually focus on one particular marker of formality and on the comparison of native and non-native speech. For instance, Adamson and Regan (1991) compared the production of the affix *-ing* as informal *–in'* or as formal *-ing* by native and non-native speakers of English. Dewaele (2002) compared how native and non-native speakers of French use formal *vous* and informal *tu*. This thesis takes a different approach and studies situational variation in ELF speech from a register point of view.

Previous studies on L1 situational variation sometime use the closely related terms of 'genre' and 'register' to describe similar phenomena and sometimes even use them interchangeably (Lee, 2001; see also Biber & Conrad, 2009). Lee (2001) called the discussion about what exactly differentiates between the notions of 'genre' and 'register' a "well-known quagmire" (p. 41).

First and foremost, it is important to note that 'genre' and 'register' show large overlap: both Lee (2001) and Biber and Conrad (2009) indicate that the two notions reflect different perspectives towards largely the same objects of study. For instance, Lee (2001)

> "contend[s] that it is useful to see the two terms *genre* and *register* as really two different angles or points of view, with *register* being used when we are talking about lexico-grammatical and discoursal-semantic patterns associated with situations (i.e., linguistic patterns), and *genre* being used when we are talking about memberships of culturally-recognizable categories." (p. 46; emphasis in the original)

Genre analysis, then, is mainly concerned with the conventionalized (structural) organization of texts, or speech events, within given cultures. In contrast, register analysis focuses on the way language is used under the influence of the situational context. This distinction shows remarkable similarities to the study of L2 English from either an SLA perspective, in which speakers' acquisition of certain linguistic norms is studied, or an ELF perspective, in which the functionality of the language used in a particular communicative setting is studied.

Consequently, since I largely adopt an ELF point of view towards L2 speakers, focusing on language use rather than on conventions, the term that fits best is 'register variation'. In my conceptualization of register, I follow Biber and Conrad's (2009) approach, which is characterized by the idea

> "that linguistic features are always *functional* when considered from a register perspective. That is, linguistic features tend to occur in a register because they are particularly well suited to the purposes and situational context of the register." (p. 6; emphasis in the original)

From this point of view, a register (or situational variety) is characterized by the use of linguistic features that may occur in any other register, but that are particularly salient in the target register (Biber & Conrad, 2009).

According to Biber and colleagues (Biber, 1988; Biber & Conrad, 2009), the situational context of a register can be defined based on a framework that consists of

language-external characteristics of the speech situation: the participants and the relationship between them, the channel, the production circumstances, the setting, the communicative purpose, and the topic (see also Steen, 2011, for a similar framework). Language users take these language-external characteristics into account and adapt their language accordingly.

In order to explain how this adaptation works, Steen (2011) takes a cognitive-psychological perspective to situational variation. He proposes that speakers rely on knowledge schemata that they have about speech situations in order to determine their (linguistic) behavior. The notion of 'schema' was first coined by Bartlett (1932) and according to Eysenck, Ellis, Hunt and Johnson-Laird (1991; see also Best & Williams, 2001, p. 208; Carroll, 2008, p. 176),

> "[s]chemata consist of structured groups of concepts which constitute the generic knowledge about events, scenarios, actions, or objects that has been acquired from past experience" (p. 316)

In other words, in each situation language users have ideas about how communication should be initiated and developed, and how information should be processed. Speakers use both long term knowledge schemata that have been acquired through past experiences or explicit training, and short term schemata that are created and reshaped within one specific, ongoing speech event (see e.g. Steen, 2011).

Both long and short term cognitive schemata may play a role in register variation in ELF communication. According to Mauranen (2011, p. 162; see also Gnutzmann, 2000), "users of ELF typically find themselves in situations where discourse norms are not clear or given [such that] terms of appropriate interaction must be negotiated by participants". In other words, the speakers of different linguistic backgrounds may rely on different long term schemata that have (mostly) been developed in their L1. Consequently, a common ground for

ELF communication needs to be negotiated: following Steen's (2011) terminology, short term schemata may need to be developed and these short term schemata may be particularly important in ELF compared to L1-L1 communication.

Studies in the field of cross-cultural pragmatics investigate the "differences in expectations based on cultural schemata" (Yule, 1996, p. 87) and have highlighted the importance of schemata in the realization of specific speech acts in a number of languages within the long-standing tradition of Blum-Kulka, House and Kasper (1989; see e.g. Blum-Kulka & House, 1989, on requests; Chen, 2010, on compliments; and Suszczyńska, 1999, on apologies). There has also been some attention for L2 users' realization of specific speech acts, in a research domain called interlanguage pragmatics (Yule, 1996), for example in work by Hendriks (2010) on e-mail requests in Dutch L2 English and by Le Pair (1996) on Spanish L1 and Dutch L2 Spanish requesting behavior.

Research in cross-cultural pragmatics is often based on data collected through a variant of the Discourse Completion Task (Blum-Kulka et al., 1989). There may, however, be a discrepancy between these data and language use in real life speech situations. In contrast, the register perspective taken by Biber and colleagues (Biber, 1988; Biber, Conrad & Reppen, 1998) is based on corpora that contain language produced in real-life situations. Within this tradition, register variation has been investigated with mother tongue speakers of multiple languages (see e.g. Biber, 1995, for analyses of English, Somali, Tuvaluan and Korean; Biber, Davies, Jones & Tracy-Ventura, 2006, for Spanish). However, to our knowledge, no studies exist that build on their findings to investigate register variation in non-native speech.

I will use corpus data in order to investigate register variation by non-native speakers of English. This approach will on the one hand extend register variation research towards communication in English as a lingua franca, and on the other hand complement

interlanguage pragmatics research by using a different methodology and a different type of data. In order to make generalizable claims about non-native register variation, a reasonably large collection of non-native speech is needed.

Non-native corpus data

Studies within both the ELF and the SLA paradigms have made use of (large) corpora of speech. ELF corpora and SLA learner corpora have in common that they focus on non-native language data (Mauranen, 2011). Moreover, just as Swan (2012) claims that ELF and the study of English from an SLA point of view "are on opposite sides of the same coin" (p. 388), Mauranen (2011) acknowledges the possibilities for "fruitful cross-fertilization between the two kinds of corpora" (p. 165). Nevertheless, there are also important differences between ELF corpora and learner corpora, which can ultimately be traced back to the question whether the L2 speakers are considered to be language learners, to whom the language in the corpus is a target language and thus the object of study, or language users, to whom the language in the corpus is a tool that they use for real-life communication (Mauranen, 2011).

Examples of large ELF corpora are the Vienna-Oxford International Corpus of English (VOICE; Seidlhofer, 2010), the Corpus of English as a Lingua Franca in Academic Settings (ELFA; Mauranen, Hynninen & Ranta, 2010) and the Asian Corpus of English (ACE; Kirkpatrick, 2010), which is currently under development. The most important characteristic of ELF corpora is that they contain naturally occurring speech "that would have [been produced] anyway, whether or not a researcher was around to record it" (Cameron, 2001, p. 20; cited by Breiteneder, Pitzl, Majewski & Klimpfinger, 2006, p. 164). These data allow scholars to study language as it is actually used to serve real-life purposes. Moreover, they allow ELF scholars to maximally avoid what Labov (1972) called the 'Observer's

paradox', which states that researchers would ideally observe people's behavior when they are not being observed.

A second important feature of ELF corpora is the large number of speakers and language backgrounds that are included. For instance, ELFA involves 650 speakers with 51 different L1s and VOICE even holds 1250 different speakers with 50 different L1s. Both corpora include relatively small amounts of speech produced by native speakers of English; the vast majority of speakers use English as an additional language. A third characteristic of ELF corpora is the diversity of the speech situations that have been recorded. VOICE distinguishes ten different speech event types, including interviews, conversations and meetings. ELFA is more specific of academic settings, but includes both monologic settings such as lectures and presentations, and dialogic/polylogic settings such as seminars and conference discussions.[2]

Examples of large SLA learner corpora are the International Corpus of Learner English (ICLE; Granger, Dagneaux, Meunier & Paquot, 2009), which contains written argumentative essays, and the Louvain International Database of Spoken English Interlanguage (LINDSEI; Gilquin, De Cock & Granger, 2010). Learner corpora are different from ELF corpora in several respects. In general, learner corpora are much more controlled than ELF corpora. Granger (2002) states that "[a] random collection of heterogeneous learner data does not qualify as a learner corpus" and that "[t]he usefulness of a learner corpus is directly proportional to the care that has been exerted in controlling and encoding the variables" (p. 9). Consequently, "learner data is […] rarely fully natural" (Granger, 2002, p. 8): data usually result from a task which imposes certain restrictions on the learners, such

[2] The information in this paragraph on the numbers of speakers and language backgrounds and on the variety in speech situations can be found on the corpus websites: for VOICE see https://www.univie.ac.at/voice/, for ELFA see http://www.helsinki.fi/englanti/elfa/elfacorpus.

as the topic or a time limit. Moreover, the specific social context that is defined by the classroom is not necessarily representative of other communicative settings (Mauranen, 2011). What is more, learners share their L1 in the majority of language classrooms, which is fundamentally different from the large diversity in ELF speakers' linguistic backgrounds (Mauranen, 2011).

Ellis' (1994) distinction between different data types in SLA (see Figure 1.1) helps to visualize the differences between ELF and learner corpora. He distinguishes between different types of 'language use' data: natural data and elicited data. Natural data comes from communication that speakers engage in when they are not being studied (Ellis, 1994; see also Labov, 1972). Ellis (1994; following Corder, 1981) subdivides elicited data into data resulting from 'clinical elicitation'[3], for which speakers are induced to produce language of any sort (e.g. in role plays or oral interviews), and data resulting from 'experimental elicitation', for which speakers are induced to produce language that relates to specific features that researchers are interested in (e.g. through completion tasks or imitation tasks).

While Ellis' (1994) approach seems rather categorical (see the boxes in Figure 1.1), I believe that there is a continuum ranging from purely natural data on one end, to experimentally elicited data on the other end, with clinical elicitation in an intermediate position. I visualized this continuum by adding an arrow to Ellis' original distinction (see Figure 1.1). The continuum is defined by the level of control exerted by the researcher over the speech situation (see Ellis, 1994; Wagner, Trouvain & Zimmerer, 2015). ELF corpora approximate the natural, low control extreme of this continuum. Depending on the research questions that SLA scholars want to answer, learner corpora may hold highly controlled,

[3] 'Clinical elicitation' may be a misleading term, since it carries connotations of a very sterile setting. I present the notion as it can be found in Ellis (1994).

experimentally elicited data or elicited data that takes some intermediate position on the continuum.

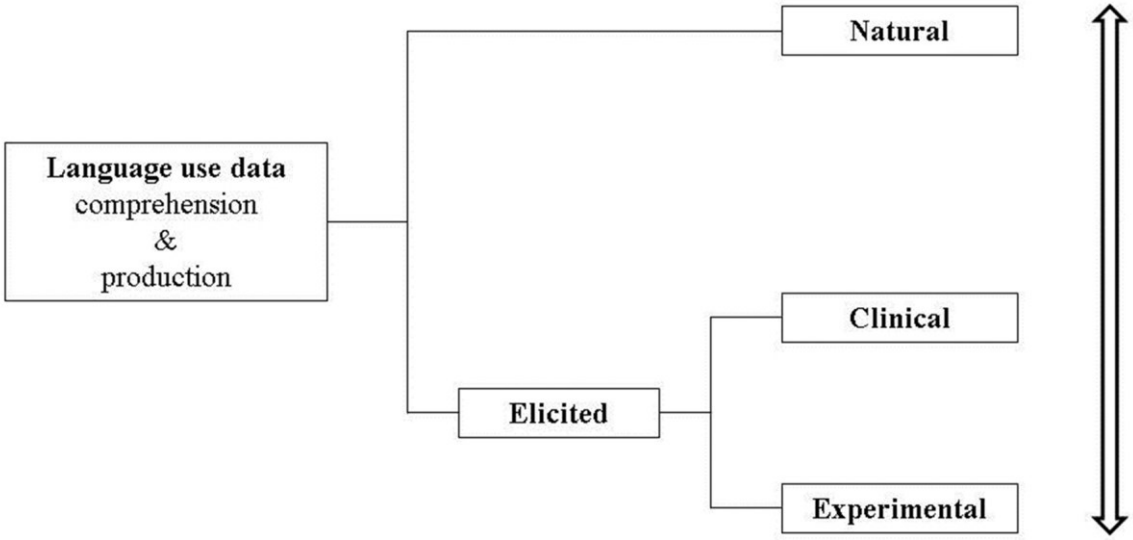

Figure 1.1

Language use data types used in Second Language Acquisition research, adapted from Ellis (1994).

Such a less categorical interpretation of the distinctions made by Ellis (1994) opens up the possibility for the compilation of corpora holding natural speech that is produced in somewhat more controlled environments. For instance, Torreira and colleagues have compiled corpora of conversational L1 French (Torreira, Adda-Decker & Ernestus, 2010) and L1 Spanish (Torreira & Ernestus, 2010) produced in triadic interactions between friends, one of whom was a confederate of the researchers. Strictly speaking, the data in these two corpora are elicited, not natural, since it would not have occurred anyway, but was initiated by the researchers. However, through the clever use of confederate speakers, the researchers could record rather natural speech, while exerting some control over the speech situation.

Comparable corpora do not exist for non-native speech. This is a shame, because there would be a lot to gain from natural speech data produced in somewhat controlled environments. For example, the study of non-native register variation would benefit from speech data from the same non-native speakers in different speech situations. While some ELF corpora include the same speakers in different speech situations, this is not systematic.

Existing SLA corpora may hold speech by the same language learners in different situations, but these cannot be considered natural, given the language classroom setting in which they have been elicited, and where the focus was on language acquisition.

In short, a sufficiently large corpus that takes an intermediate position between the naturalness of ELF corpora and the control over the speech situation of SLA corpora, and that includes speech from the same non-native speakers in different speech situations would be a major contribution to the study of non-native register variation. A big advantage of such a corpus is that it allows for quantitative, within-speaker comparisons of the speech in the different situational contexts. As a consequence, generalizable conclusions can be drawn based on a relatively small sample of speakers.

Methodological considerations: qualitative vs. quantitative approaches

Research within the ELF paradigm is generally qualitative of nature, but there has been a shift from features based to process based investigations (see e.g. Jenkins et al., 2011). In a first overview article of ELF research, Seidlhofer (2004) calls for descriptive work in the domain of ELF in order to come to a "gradually accumulating body of work [that] will lead to a better understanding of the nature of ELF" (p. 215). One aim of this descriptive work would be to come to "comprehensive and reliable descriptions of salient features of ELF" (Seidlhofer, 2004, p. 215), which could be used to codify ELF. Seven years later, however, in a second ELF overview paper, Jenkins et al. (2011) "call into question the viability of attempting a description of ELF […], at least according to the traditional sense of 'language description'" (p. 295), since rather than by its regularities, ELF is best characterized by its variability, and by the online choices ELF speakers make to communicate their message, the authors argue.

The domain of phonology exemplifies the shift from features based to processes based investigations (Jenkins et al., 2011). It was one of the first linguistic levels to have received descriptive attention in ELF research, with Jenkins' (2000) 'Lingua Franca Core' (LFC) as the most extensive example. The LFC describes which phonological features are and which are not essential for intelligible ELF speech. Later studies into ELF phonology focused more on ELF speakers' accommodation towards their interlocutors (Jenkins et al., 2011). In fact, accommodation and the co-construction of meaning have become keywords in most studies of ELF at all linguistic levels. For instance, studies into ELF pragmatics usually adopt a Conversation Analysis type of approach in order to describe how speakers adapt their speech to, and in cooperation with, their interlocutors and how they negotiate meaning to avoid miscommunication (see e.g. Seidlhofer, 2009; Mauranen, 2006; Björkman, 2011, 2014).

The consequence of the focus on co-construction and negotiation is that most ELF studies do not go beyond rather local descriptions of communicative processes. This is in line with Seidlhofer, Breiteneder and Pitzl's (2006) suggestion that

> "it is advisable to be tentative and circumspect and to proceed by way of clearly situated qualitative studies with a strong ethnographic element. As more qualitative, hypothesis-forming findings begin to emerge, it will become possible to introduce more controlled, quantitative procedures" (p. 21).

While qualitative, descriptive studies of ELF have proven to be of great value since they have allowed for the large variation that exists in ELF to surface and be analyzed, it is difficult to generalize the results from these studies to other speech situations and to other speakers. Therefore, almost ten years after the call to be tentative and rely heavily on ethnographic methodology made by Seidlhofer and colleagues (2006), the time has now come to also start introducing quantitative analyses of controlled ELF data.

In this thesis, I do exactly that. I study rather natural ELF speech data from slightly controlled speech situations, in order to be able to carry out quantitative, comparative analyses of ELF speech and to produce generalizable findings. The studies in this thesis try to answer the following research question: *do changes in the situational context lead to register variation in Spanish L2 users' English, and if so, how is this register variation reflected on different linguistic levels*?

Data, points of view and methodology in this thesis

The studies in the following chapters are all based on the Nijmegen Corpus of Spanish English (NCSE) that I compiled as part of the PhD-project that resulted in this thesis. The NCSE consists of spontaneous speech between Spanish and Dutch L2 users of English. Spanish and Dutch were chosen mainly because the phonotactics of Spanish, a Romance language, and Dutch, a Germanic language, lead to typical difficulties of a different kind for Spanish and Dutch L2 speakers of English (see Coe, 2001, for Spanish; Tops, Dekeyser, Devriendt & Geukens, 2001, for Dutch). Furthermore, while Dutch speakers from the Netherlands generally have some knowledge of French and German, most do not know Spanish. Spanish speakers usually do not speak Dutch. As a consequence, the probability that the speakers in the NCSE could rely on knowledge of their interlocutor's language is low.

Importantly, all Spanish speakers have been recorded in both an informal, peer to peer conversation and a formal interview. The Dutch speakers were two confederates who spoke with each Spanish speaker in either the informal or the formal setting. The NCSE allows for generalizable claims to be made, at least about L2 users of English who share a common western European culture, based on quantitative comparisons of the same L2 speakers of English in two different speech situations. Since the speech in the NCSE was recorded during spontaneous sessions, but in a controlled environment with confederate speakers, the NCSE can be said to hold an intermediate position between learner corpora and ELF corpora. More

specifically, with regard to Ellis' (1994) distinction, the NCSE can be placed between clinically elicited and natural data, and may be referred to as 'drafted natural data'.

The positioning of the NCSE is illustrative of my approach towards the study of lingua franca English. On the one hand, I adopt the most central point of view of scholars in the ELF paradigm: I consider the speakers in the NCSE to be language users, not language learners. As a consequence, I will study the language that was produced by the speakers in the NCSE in its own right, instead of evaluating it against native English norms. On the other hand, I will not adopt the qualitative, descriptive methodologies that are generally used in ELF studies. While "contextual factors have moved towards centre stage" (Jenkins et al., 2011, p. 296) of ELF research, to our knowledge no quantitative analyses exist that study the influence of the situational context on L2 users' English from a register perspective. I will complement the existing qualitative ELF studies by taking a quantitative, comparative approach. Moreover, in addition to analyzing data from the NCSE, I will carry out experimental studies, with materials from the corpus.

I will study how the situational context affects non-native communication in English on three linguistic levels. First, in Chapter 2, I will give a detailed description of the compilation and the contents of the NCSE. Then, I will establish whether the NCSE holds speech that is characteristic of two different registers. Previous studies have shown that laughter (see e.g. Garcia, 2013; Glenn, 2010), overlapping speech (see e.g. Tannen, 2005) and the use of L1 words in L2 (Dewaele, 2001) are markers of informality. Moreover, Biber and colleagues (e.g. Biber, 1988; Biber et al., 1998; Biber et al., 2006) have consistently shown that an important dimension of register variation is the degree to which language is involved (i.e. affective, interactive) or informational (i.e. focused on information exchange). In Chapter 2, I will analyze the speech in the NCSE on all these variables, in order to answer the following research question: *do Spanish L2 users of English show register variation*?

Secondly, if the language in the informal and the formal speech situations recorded in the NCSE indeed represents two distinct registers, it is possible to study the influence of the situational context on non-natives' communication strategy use. Communication strategies can be defined as all attempts to prevent or overcome linguistic difficulties (see e.g. Dörnyei & Scott, 1997; Björkman, 2014). They are used, for example, when a lexical item is (temporary) unavailable to the speaker, who may then use related words or a description of the target word. The use of communication strategies shows speakers' wish to maintain the flow of communication (e.g. Grice's, 1975, Cooperative Principle). Moreover, it reflects speakers' ways of managing the discourse.

Both natives and non-natives may use communication strategies, but they are particularly useful for non-native speakers. As a consequence, the investigation of communication strategies has been initiated from a Second Language Acquisition perspective. Studies in the field of SLA have shown rather consistently that speakers tend to opt for different communication strategies depending on the task that is at hand (see e.g. Poulisse, 1993; Poulisse & Schils, 1989). Since a task defines a particular situational context, these results suggest that, from a register variation point of view, particular communication strategies may better serve the purposes of communication in a given situation than other strategies. However, a comparative study of communication strategy use in different speech situations does not exist, to our knowledge. Chapter 3 presents such a study: I will investigate register variation at the discourse management level, in order to answer the following question: *is communication strategy use by Spanish L2 speakers of English influenced by the situational context*?

Thirdly, when speakers switch from an informal to a formal register, their pronunciation is a likely linguistic candidate to reflect this switch. In casual speech, native speakers of many languages utter reduced word tokens that deviate from their citation forms,

with fewer segments or even syllables (see e.g. Ernestus & Warner, 2011; Johnson, 2004). Speech reduction by natives has been shown to be more common and more drastic in informal than in formal speech (see e.g. Ernestus, Hanique & Verboom, 2014; Warner & Tucker, 2011). In contrast, not much is known about non-native speech reduction and how it is influenced by the situational context. Non-natives behaved like natives in two separate studies, one based on read speech (Baker et al., 2011) and one on casual speech (Schertz & Ernestus, 2014). The combination of these two studies suggests that there is an effect of register on non-native speech reduction, but a within speaker analysis of non-native speech from different situational contexts will provide more insight in non-native situational variation in speech reductions.

In Chapter 4, I will study speech reduction in formal and informal Spanish English. Moreover, I will explicitly compare reduction in Spanish L2 English speech with American English speech. The objective of this comparison is not to determine how well non-native speakers are able to produce forms that are similar to native speech. Rather, the comparison will shed light on differences that may exist between native and non-native English and how these differences may have an impact on comprehension by both native and non-native listeners.

The phenomenon I will focus on in Chapter 4 is word-final /t/-reduction, specifically in *can't*. Spanish speakers of English are known to have difficulties producing consonant clusters (Coe, 2001), while /t/ has been shown to be frequently absent from *can't* in American L1 speech (see e.g. Labov, 1972; Pitt, 2009; Sumner & Samuel, 2005). Consequently, although the reasons for speech reduction may be different, the result may be similar: when the word-final consonant cluster in *can't* is simplified, the resulting word token may be similar to *can*. This, in turn, may lead to ambiguity about whether a positive or a negative statement is produced. In Chapter 4, I will try to answer the following research questions:

first, is /t/ absent from can't *more often in informal than in formal Spanish English speech and more often from Spanish than from American English speech; and, secondly, what are the consequences of the absence of /t/ for the comprehension of American and Spanish English* can't?

In Chapter 5, I will briefly summarize my findings, and combine them in order to answer the overall research question: *how does situational context affect lingua franca communication among non-native speakers of English*? I will reflect on the implications of my findings and on avenues of research that this thesis opens up.

2 Two *Dos* *Twee*

Register variation by Spanish users of English

The Nijmegen Corpus of Spanish English

This chapter is based on:

Kouwenhoven, H., Ernestus, M. & Van Mulken, M. (2015). Register variation by Spanish users of English: The Nijmegen Corpus of Spanish English. *Corpus Linguistics and Linguistic Theory* (ahead of print). doi: 10.1515/cllt-2013-0054.

Abstract

English serves as a *lingua franca* in situations with varying degrees of formality. How formality affects non-native speech has rarely been studied. We investigated register variation by Spanish users of English by comparing formal and informal speech from the Nijmegen Corpus of Spanish English that we created. This corpus comprises speech from thirty-four Spanish speakers of English in interaction with Dutch confederates in two speech situations. Formality affected the amount of laughter and overlapping speech and the number of Spanish words. Moreover, formal speech had a more informational character than informal speech. We discuss how our findings relate to register variation in Spanish.

Introduction

English is the most widely used means of communication during international encounters (e.g. De Swaan, 2001). The study of English as a *lingua franca* (ELF), which focuses on the use of English by speakers who do not share a language background, has gained momentum in recent years (e.g. House, 2013; Mauranen, 2003; Mauranen, Hynninen & Ranta, 2010; Seidlhofer, 2001, 2010) and acknowledges the wide variety of speech situations in which ELF is used. For example, English can be the means of communication in very formal settings, such as business negotiations or academic lectures. In these speech situations, the focus is on the exchange of information and the language will have an informational character (e.g. Biber, Conrad & Reppen, 1998). In addition, ELF is used in informal settings, such as get-togethers of international exchange students. In these settings, the focus is on involved, interactive language (e.g. Biber et al., 1998). Importantly, Firth (2009, p. 164) notes that in the international business encounters he studied, a pattern of "small talk" preceding "work talk" is observable, suggesting that non-native (L2) speakers may engage in both an informal, involved and a formal, informational speech situation within one single encounter.

This raises the question whether non-native users of English adapt their language to the formality of the speech situation, in particular when they only communicate with other non-native users of English and no native speakers are present who could set a certain norm. We contribute to answering this question by investigating whether Spanish speakers of English, who are involved in an ELF communicative setting with Dutch speakers of English, show register variation. In order to answer this question, we have developed a new corpus of non-native speech, which will also be presented in this chapter.

Ample investigations of native (L1) speakers have shed light on the variability of language use according to the speech situation. We know from these studies that L1 speakers

adapt their language use to the situational context by varying word choice, pronunciation and syntactic structures, for example (e.g. Biber, 1988; Biber & Conrad, 2009; Ernestus, Hanique & Verboom, 2015; Lee, 2001; Van Herk, 2012). This adaptation to the speech situation has been studied in different languages. For instance, as described by Biber and colleagues (Biber, 1988; Biber et al., 1998; Biber, Davies, Jones & Tracy-Ventura, 2006), native speakers of both English and Spanish use first and second person pronouns, causative subordination and present tense verbs more often in spontaneous conversations than in formal interviews and written language. Informational discourse, including academic writing and to a lesser extent formal interviews, is characterized by a high word type/word token ratio, longer words, more (premodifying) attributive adjectives and more nouns (Biber, 1988; Biber et al., 1998, 2006).

Analyses of register variation by speakers of an L2 are very few, but difficulties with situational variation may be expected. Thompson and Brown (2012) put forward that register variation may be acquired late, only after more basic language skills, such as grammar and oral expression. Moreover, even if L2 users do have the knowledge about variation, they can still encounter difficulties remembering and applying all characteristics of a given register simultaneously (Dewaele & Wourm, 2002). For example, when focusing on producing grammatically correct language, an L2 speaker may loose track of the appropriate pronunciation forms given the speech situation. These difficulties may be due to the gap between the acquisition of linguistic forms and their socially appropriate use. Kecskes and Papp (2000) state that children simultaneously acquire knowledge about linguistic forms and their socially appropriate use in their L1, integrating the two types of information. In contrast, those who learn their L2 in a classroom often acquire L2 concepts with little to no information about situational context (Dewaele & Wourm, 2002; Romero-Trillo, 2002). As a consequence, L2 learners cannot fully develop their sociolinguistic competence (Dewaele &

Wourm, 2002; Romero-Trillo, 2002; Geeslin & Long, 2014), and they may have difficulties adapting to the speech situation.

Previous work has investigated how L2 speakers adapt their pronunciation to the situational context. These studies have shown that the influence of speech style on pronunciation is not always similar for natives and non-natives. Thompson and Brown (2012), for example, studied one very advanced Spanish speaker of English and expected a more standard pronunciation when the amount of monitoring of speech increased (following Labov, 1966). They found the exact opposite: the percentage of correct articulations of the vowel /I/ deteriorated as the formality of the speech situation increased. Furthermore, Adamson and Regan (1991) compared the production of the affix *-ing* as [Iŋ] (the prestige variant in English) or [In] (the non-prestige variant) by non-native (Vietnamese and Cambodian) and native speakers of English in both monitored and unmonitored speech. The proportion of [In] was higher in unmonitored speech for male and female native speakers, and for non-native female speakers. The opposite was true for non-native male speakers, who showed a higher proportion of [In] in monitored speech. Adamson and Regan (1991) suggest that these male non-native speakers try to accommodate to a general male native English norm rather than to a situation-specific native English norm, which leads to the overuse of the casual [In] in situations where the more formal [Iŋ] is more common.

Phonology is only one aspect of language. Other linguistic variables have received less scholarly attention when it comes to L2 variation, but some studies do exist. For instance, Geeslin and Gudmestad (2008) investigated the use of indicative or subjunctive mood and of copulas in written and spoken Spanish both by native and non-native speakers. They compared written contextualized tasks (WCT; tasks that provide a context after which participants indicate their preference for some linguistic structure over another) with sociolinguistic interviews. Results showed that both native and non-native speakers of

Spanish preferred the subjunctive mood over the indicative mood and *estar* over *ser* (both translated as 'to be' in English) more often in the WCT than in the interview. The researchers also found differences between the native and non-native speakers, but only for mood choice: non-natives used fewer subjunctives than natives. Dewaele (2002) studied L2 learners' use of personal pronouns in French and found that non-native speakers of French use both informal *tu* and formal *vous* but in ways that diverge from the native speaker norm. Just like the pronunciation patterns found by Thompson and Brown (2012) and Adamson and Regan (1991), the studies by Geeslin and Gudmestad (2008) and Dewaele (2002) reveal the presence of non-native sociolinguistic competence, as reflected by the existence of systematic variation, but also differences between native and non-native variation. The consequences of this kind of deviation from the norm may be severe: it could lead to unfavorable impressions in interlocutors (Geeslin & Long, 2014).

The present study extends the research on non-native register variation by investigating other, less studied, variables in two situations in which English is used by non-native speakers as lingua franca. First, we will investigate laughter, which previous studies have shown to be an indicator of the formality of the situation in native speech (e.g. Garcia, 2013; Glenn, 2010). We expect fewer occurrences of laughter in formal than in informal speech. Secondly, we will study the amount of overlapping speech, which is a measure of the high-involvement, interactive style of conversation (e.g. Tannen, 2005). We expect overlapping speech to be more frequent in an informal than in a formal speech situation. Thirdly, we will analyze the number of L1 words that speakers use in their L2 English. Dewaele (2001) found that, in third language (L3) production, more L1 was used in informal than in formal speech. Following this finding, we expect more L1 words to be used in an informal than in a formal L2 English speech situation.

Then, we will test a set of eighteen linguistic features taken from the informational versus involved dimension[1] identified by Biber and colleagues (Biber, 1988; Biber et al., 1998). This dimension is a scale, or continuum, on which texts can be classified based on the co-occurrence of linguistic features that share particular functions, ranging from highly informational to highly involved language, rather than a tool to indicate absolute differences between registers (Biber & Conrad, 2009). Based on previous research on L1 English and L1 Spanish (Biber, 1988; Biber et al., 2006) we generally expect features that are characteristic of involved, interactive discourse (such as first person pronouns, second person pronouns and present tense verbs) to be used more often in informal than in formal speech. Features that are associated with informational language (such as nouns, long words and a high word type/word token ratio) are expected to be used less often in informal than in formal speech.

The formal and informal speech on which we base all our analyses is spontaneous speech, rather than (classroom) elicited speech. For this, we developed the Nijmegen Corpus of Spanish English (NCSE)[2]. The NCSE contains conversational speech of thirty-four Spanish speakers of English in both a formal and an informal speech situation, in interaction with instructed Dutch confederates. We opted for Spanish and Dutch speakers of English, because Spanish belongs to a different language family than both English and Dutch. As a consequence, the issues that native speakers of Dutch and Spanish have with English in

[1] Biber (2004) also performed a factor analysis of only conversation text types. This analysis may seem more relevant for the present study since we also focus on conversational speech. However, in this more recent paper, Biber argues that the dimensions that he found to distinguish between conversation text types are strikingly similar to those he found for general spoken and written registers (Biber, 1988). Since the earlier, general analysis yields more extensive descriptions of the features included in his study, we base our work on that earlier study.

[2] Information about how to obtain a copy of the corpus can be found at *http://www.mirjamernestus.nl/Ernestus/NCSE/index.php*.

domains such as phonology and syntax are very different (see Tops, Dekeyser, Devriendt & Geukens, 2001, for Dutch; Coe, 2001, for Spanish). Moreover, Spanish is not as well known in the Netherlands as French, for example. Therefore, it is less likely that Spanish and Dutch interlocutors can rely on knowledge of the other's L1.

Finally, L1 speakers of Dutch and Spanish share Western European cultural norms, and therefore are culturally determined to adapt their (language) behavior to the situational context in a similar way. To illustrate, the Official State Gazette of the Spanish government (Boletín Oficial del Estado, N^{o} 178, July 2011) explicitly states that students between the ages of 6 and 12 should learn to distinguish between and to be able to produce language of different degrees of formality. Moreover, Batchelor and San José (2010) dedicate the first chapter of their reference grammar of Spanish to register variation and how register variation affects Spanish grammar. As a consequence, we may safely assume that if the Spanish speakers in the NCSE have difficulties adapting their register in English, these are linguistic rather than cultural difficulties.

The NCSE can be positioned between learner corpora and ELF corpora, which both contain non-native (speech) data. Mauranen (2011) states that the main distinction between the two can be summarized by the question whether, for the speakers in the corpus, English is the object of study or a means of communication (for detailed discussions of the differences and similarities between the two types of corpora see Mauranen, 2011, and Granger, 2002, 2009). ELF corpora contain naturally occurring language, authentic talk, produced in real-life situations by non-native users of English. Speakers in ELF corpora, who do not share their linguistic backgrounds, use the English they master to achieve real-life goals. The NCSE shares this with ELF corpora: it includes users of L2 English whose objective was to communicate with each other, not to produce perfect English. In contrast, learner corpora comprise language from learners, who usually share their language background, and who try

to acquire a certain set of (idealized, native) norms. Learner corpora are compiled following explicit design criteria and for a specific purpose, such as the study of the acquisition or the teachability of a certain linguistic feature. The NCSE was also compiled based on explicit design criteria for the purpose of collecting both formal and informal speech from the same Spanish speakers of English. However, most importantly, we tried to obtain natural language for the NCSE. We therefore tried to achieve the right balance between authenticity of the speech and ecological validity on the one hand and control over the recording quality and the degree of formality of the two speech situations on the other.

The Nijmegen Corpus of Spanish English

Interlocutors

As mentioned above, our study focuses on non-native speakers in situations where English is used as a lingua franca. For this, we included L2 speakers of English with two different L1s: native speakers of Dutch and of Spanish.

Two confederates, a 23 year old male and a 24 year old female, both undergraduate students and native speakers of Dutch, were recruited at the Radboud University. Both were selected based on their open style of communication and ability to put their interlocutors at ease. Moreover, they had ample experience with role playing in an improvisational theater group. The selection procedure of the confederates involved a short conversation in English with the first author (henceforth HK), who checked whether the candidates were proficient, but not native-like in English, in order to enhance the ecological validity of the corpus: in real-life, L2 speakers who engage in communication in English are not necessarily near-native speakers. Furthermore, the Dutch speakers of English would not be too intimidating to the Spanish speakers of English. After the recordings of the NCSE, an experienced teacher of Cambridge ESOL/IELTS exam courses assessed the confederates' English proficiency levels

at the B2/C1 level of the Common European Framework for Languages (CEFR; Council of Europe, 2001). He did so by listening to two randomly selected excerpts of the confederates' speech. Neither of the confederates spoke Spanish. Both received payment for the two weeks of recordings.

Thirty-four Spanish university students took part in the recordings. Their ages ranged from 19 to 25 years ($M = 21.44$ years, $SD = 1.48$ years). Seventeen speakers were male, seventeen were female. Most participants were near the end of their studies while two were in their first year. The majority were students of engineering, whereas five participants studied other degree subjects (law; arts; visual communications; advertising and public relations; English studies).

All Spanish participants replied to a call in which we asked volunteers to participate in a research project. This call was in Spanish, as were all other communications with the Spanish participants prior to their arrivals at the recording sessions. The call did not mention that the recordings would be in English. We proceeded in this way in order to avoid self-selection by participants based on their interest and/or proficiency in English.

The evaluator who assessed the Dutch confederates' English proficiency levels, also did so for the Spanish speakers in the NCSE: two speakers were classified at the A1 level, ten at the A2 level, nineteen at the B1 level, and three at the B2 level. An overview of the CEFR proficiency levels of the Spanish speakers in the NCSE can be found in Appendix 2.1.

Recording setup

The NCSE was recorded by HK in the laboratory of the *Grupo de Tecnología del Habla* at the *Escuela Técnica Superior de Ingenieros de Telecomunicación* of the *Universidad Politécnica de Madrid*. All recordings were made in a sound-attenuated room which had an approximate size of 2.80 x 3.20 x 3.30 m (see Figure 2.1 for an overview of the setup of the

recording booth during the informal setting). A large window, which overlooked the laboratory, was covered with cardboard so that HK's presence behind it would not influence the conversations. Against the wall with the window, a table was placed with on top of it several pieces of unused equipment (e.g. a PC monitor, a microphone with some cables, a camera tripod) and some cardboard boxes. Another long table was placed perpendicular to the first table and also carried some unused equipment and boxes. The interlocutors sat at this long table. The Spanish speakers were always seated at the head of the table, with the Dutch confederate sitting to their right. The walls were hung with some pictures of public figures and a map of Madrid. These could be used as conversation topics and made the room more pleasant to be in. For this reason there also was a coat rack on which the speakers could leave their coats and bags.

For the audio recordings, both speakers wore Samson QV head-mounted microphones. They were recorded in separate audio channels on an Edirol R-09 solid-state stereo recorder. The distance between the left corners of the speakers' lips and the microphones was about 3 cm. Speech signals were amplified with a stereo microphone preamplifier.

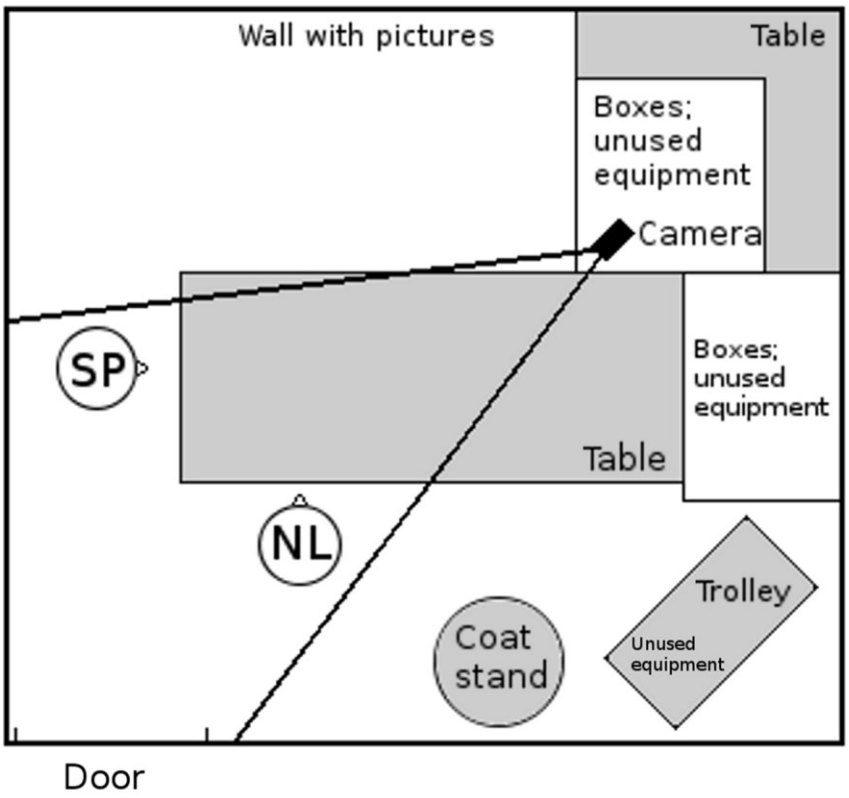

Figure 2.1

Setup of the recording booth in the informal setting.

The video recordings were made by means of a Sony HDR-SR7E Handycam in HD quality (AVC HD format at 9 Mbps). During the informal part of the recordings, the camera was placed on top of a box and some cables, between the unused equipment, and with an unplugged adapter cable hanging down. The recording light of the camera was switched off. This approach effectively leaves participants unaware of the fact that they are videotaped (Torreira, Adda-Decker & Ernestus, 2010). The position of the camera was chosen so that it captured a frontal view of the Spanish participant and a side view of the Dutch confederate. For the formal part of the experiment, the camera was put on a tripod on the long table, aimed directly at the Spanish participant.

Recording procedure: informal conversation

All participants engaged in the informal part of the recordings before the formal part. As such, there was a transition from a kind of small talk in the beginning to formal

communication in the end. This coincides with Firth's description of the natural development of interaction during ELF business encounters (2009).

Following Torreira et al. (2010), we tried to make the Spanish participants think that the confederate in the informal part of the recording was just another regular participant. By doing so, we created a speech situation in which the Spanish participant and the Dutch confederate were peers. Approximately ten minutes before the Spanish participant was expected to arrive, the Dutch confederate of the corresponding sex (henceforth Confederate 1) also went to the meeting point and waited for HK, as did the Spanish participant. At the agreed time, HK went out to meet the Spanish participant and Confederate 1. HK introduced himself to both and introduced them to each other. HK then asked them to wait outside while he made some final preparations. Confederate 1 was instructed to use this time to start up a conversation in order to try and break the ice.

HK started the audio and video recordings before returning to get the interlocutors. When entering the recording booth, Confederate 1 always took the same seat, leaving the chair at the head of the table for the Spanish participant. Both interlocutors were asked to put on their microphones and then HK told them that he would leave to get the task they were going to perform, and that it would be good for the project if, in the mean time, they got to know each other. HK did not explicitly mention the recordings, so that the Spanish participant would remain in doubt about whether they would start immediately or only after the speakers had received their task.

For this initial part of the informal conversation, Confederate 1 had been instructed to discretely let the Spanish participant speak most of the time. Moreover, in order to diminish the Spanish participants' potential reluctance about speaking English, Confederate 1 was instructed to make the Spanish participants feel at ease and compliment them on their English if they expressed doubts about their proficiencies.

Most conversations started with the interlocutors continuing to introduce themselves: they spoke about their education and daily lives. Quite quickly the conversations turned to other topics, such as the city of Madrid, football, travel and the crisis in Spain. This first part lasted about 25 to 30 minutes. When the conversation seemed to come to an end, HK returned to the recording room with a name guessing game. The interlocutors were instructed to, alternately, pick a card which had a name of a public figure (from music, cinema, politics, sports, etc.) on it. They were to describe this public figure to their interlocutor, who had to guess the name on the card. For this part, Confederate 1 was instructed to, whenever possible, keep the conversation going about the name on the card or a related topic. This second part of the informal recordings lasted 15 to 20 minutes. Then, HK re-entered the recording room and invited the Spanish participant and Confederate 1 to take a short break outside the recording booth.

Recording procedure: formal interview

During the break, both the Spanish participant and Confederate 1 received written instructions, in English, about the second part of the recordings. These explained that a formal interview would be recorded as part of a graduation project for a journalism master's degree about the crisis situation in Spain and Europe. In the project's end product the interviewees' opinions would be mirrored with those of politicians and other influential people. The written instructions were aimed at putting the Spanish participants in a more formal mindset.

Once HK had changed the camera setup, placing the camera on a tripod on the table pointing it directly at the Spanish speaker, he introduced the confederate of the opposite sex (henceforth Confederate 2) to both the Spanish participant and Confederate 1. HK said that Confederate 2 was his colleague who would conduct the interviews. Confederate 2 then took the Spanish participant back into the recording booth and they both put on their microphones.

HK insisted that, during the interview, the Spanish participants could freely develop their opinions and that long answers were appreciated. HK then left the recording booth.

At the beginning of the interviews, the Spanish participants formally introduced themselves, explaining their backgrounds, providing information about their families and degree programmes. In the rest of the interview, most or all of the following topics were covered, but not in a fixed order: Spanish unemployment rates, government cuts on education, European pressure on Spain to cut costs, extra taxes for health care for the rich, King Juan Carlos of Spain, police attacks during student protests. As a closing act to the interview, which by that time had reached a high level of formality through the abstract nature of the topics discussed, the interviewees were asked about their expectations for their own personal life in the near and more distant future within the socioeconomic situation that they just sketched. The interview was closed after approximately 25 minutes.

The formal character of the interview was made clear in several ways. First, the camera was overtly present. Secondly, the interview was conducted by a person previously unknown to the Spanish participant. Thirdly, Confederate 2 was of the opposite sex to that of the Spanish participant. Fourthly, Confederate 2 used formal language so as to also elicit formal speech from the Spanish participant. This implied, for example, speaking clearly and not too fast, avoiding hesitations and laughter and paying attention to word choice. In addition, Confederate 2 used plural pronouns (for example *we would like to know...* rather than *I would like to know...*) in order to emphasize the idea that more people were going to watch the materials. Lastly, Confederate 2 and the Spanish participant wore formal clothing items, like a jacket, that we had asked them to bring to the recordings.

Overall, our manipulation of formality between the two parts of the recordings involved four of Biber's (1988; his terminology in italics) eight main components of the speech situation. First, an *audience* was added to the *communicative roles of participants*, by

insisting on the fact that people other than HK and Confederate 2 would be watching the materials. Secondly, the *relation among participants* was altered: the casual peer to peer conversation in the informal recording was changed into an interview in which Confederate 2 had the lead. Thirdly, the *setting* was changed by adding a *superordinate activity type*: in contrast to the informal conversation, which was not linked to any other speech event, the formal interview was presented as part of a bigger entity, namely a graduation project. Lastly, the *topic* was free in the informal conversations but restricted and limited to serious issues in the formal interview.

Speaker background information and informed consent

After the interview, each Spanish participant filled in a questionnaire to provide background information like age, language knowledge and education. Moreover, the questionnaire comprised evaluative items for the two parts of the recordings (e.g. about the smoothness of the communication) and for both confederates (e.g. about the interlocutor's likability and English proficiency). Participants responded to these evaluative items on seven point Likert scales.

Once the Spanish participants had completed the questionnaires, HK provided details about the objectives of the recordings. He also made clear that the camera had been rolling during both parts of the recordings and that both confederates had been instructed beforehand. When the Spanish participants indicated their understanding of the procedure, they were asked whether they had any objections against this procedure and/or the use of the materials recorded. At this point, they were free to withdraw their personal recorded material, but none did so. All participants signed consent forms stating that the recorded materials could be used for academic purposes. They received financial rewards for their participation.

Orthographic transcription

The corpus was orthographically transcribed in PRAAT (Boersma & Weenink, 2012). A transcription manual was developed specifically for the NCSE, based on previous work by MacWhinney (2000) and Torreira et al. (2010). The speech of every recording was transcribed in a PRAAT TextGrid file with three tiers: one for the Spanish speaker, one for the Dutch speaker and one for background information, for example to indicate background noise or to denote moments when HK gave instructions (see Figure 2.2 for an example).

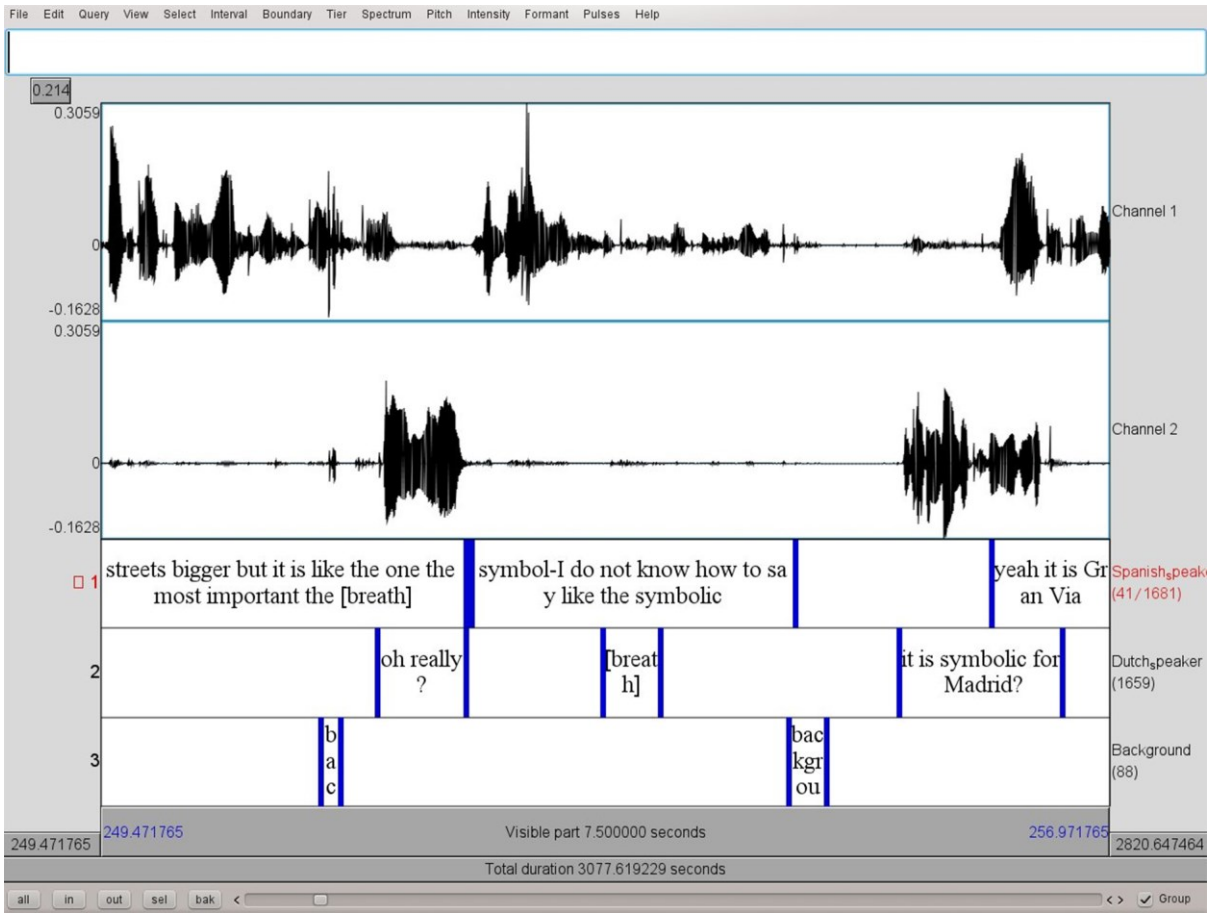

Figure 2.2

Screenshot of a transcription in PRAAT.

The speech was segmented into chunks with a mean length of approximately two seconds, containing on average 4.2 words. Because the chunks are that short, the orthographic transcription is well aligned with the speech signal, which facilitates finding a lexical item in this acoustic signal. Moreover, the short chunks of orthographically

transcribed speech, in combination with a good pronunciation dictionary and phone models, can be used to automatically generate phonetic transcriptions.

The transcriptions were made in standard American English spelling. Contractions, such as *don't*, were written in full (*do not*). Some particular speech tokens could not be transcribed in standard American English, for example Spanish or Dutch words or truncated words. These words were annotated with special symbols, an overview of which can be found in Table 2.1. Frequently recurring noises, such as breaths and laughter, were transcribed between square brackets, for example *[breath]* and *[laughter]*. If words were uttered during laughter, the start and the end of the laughter were indicated, as in *[start laughter] ok it is easy [end laughter]* (for two examples of what these transcriptions look like, see Appendix 2.2).

Table 2.1

Transcription symbols used in the NCSE.

Event type	Symbol	Example
Spanish words	*	*si
Dutch words	**	**ja
Other language	***	***Deutschland
Pronunciation error	^	^Barsil (for Brazil)
Words for sounds	#	#tu #tu #tu
Spanish word made English	*^	*^aficionate
Truncated words	\-	if you go out eh abou\- eh of the s\- the school
Unintelligible speech	xxx	and it is xxx you eh

Corpus contents: lab speech or authentic talk?

Table 2.2 gives an overview of the duration of the recorded speech and the total number of words in the NCSE. It shows that the Spanish participants talked more than the Dutch confederates. Moreover, it reveals that the NCSE contains about two times more informal than formal speech.

We have checked the Spanish speakers' perception of the *naturalness* of the speech in the recordings, which we define here as a measure of how authentic or natural the speakers

believed the talk to be, despite the laboratory setting. Our notion naturalness incorporates smoothness, spontaneousness and pleasantness of the communication, among others, measured by five items in our questionnaires ('The conversation/interview went well', 'The conversation/interview went smoothly', 'The conversation/interview was spontaneous', 'The conversation/interview was easy', 'The conversation/interview was pleasant'; these are translations of the Spanish items). The internal consistency of these five items was excellent for the informal ($\alpha = .92$) and good for the formal ($\alpha = .83$) setting. We therefore averaged over these five variables to create a single variable expressing naturalness.

Table 2.2

Contents of the NCSE: duration of speech, and numbers of word types and word tokens. The type and token counts do not include truncated words.

Total duration of speech	38h 29min
Duration of speech in informal setting	25h 13min
Dutch confederates	10h 8min
Spanish participants	15h 5min
Duration of speech in formal setting	13h 16min
Dutch confederates	3h 39min
Spanish participants	9h 37min
Total number of word tokens (Spanish speakers only)	229,415
Total number of word types (Spanish speakers only)	6,411

Importantly, the talk in both the informal and the formal speech situation was reported to be natural, as shown by the mean evaluations, which were on the higher side of the seven point Likert scale ($M_{formal} = 5.31$, $SD = 1.13$; $M_{informal} = 6.19$, $SD = 1.09$). A paired t-test showed that participants' evaluations of the naturalness were significantly higher for the informal than for the formal speech situation ($t(33) = 4.84$, $p < .001$). This is as expected, given the differences between the speech situations. Overall, participants' evaluations of the naturalness, combined with the fact that the we adapted the methodology of Torreira et al. (2010), which has proven to be effective in obtaining casual speech, strengthen our belief that the speech in the NCSE can be qualified as natural.

Participants' perception of formality

We then verified whether the speakers in the NCSE were aware of the change in formality, as this was a prerequisite for all subsequent analyses. In the evaluative questionnaires, participants rated the statements 'The conversation/interview was formal'. A paired t-test showed that there was a significant effect of our formality manipulation ($t(33) = -5.03$, $p < .001$): the formal interviews were rated significantly more formal ($M = 5.47$, $SD = 1.42$) than the informal conversations ($M = 3.62$, $SD = 1.89$). Our manipulation has thus succeeded, which makes the NCSE a suitable collection of data to investigate whether Spanish speakers of English show register variation.

Register variation in the Nijmegen Corpus of Spanish English

Dependent variables and statistical analyses

In order to investigate register variation, we studied several aspects of the Spanish English speech. We compared the informal and formal parts of the NCSE on three properties of the language that previous research has put forward as indicators of speech style. We carried out these comparisons by means of linear mixed effect models with speaker as a random factor and formality as the main fixed predictor. We also checked whether the effect of formality varied per speaker (i.e. whether the random slope for formality by speaker was significant). Since we analyzed three dependent variables, we applied a Bonferroni correction and set our α-level at .017.

In some models, we added other control variables, which we will indicate below. Proficiency level was a control variable that we intended to include in all our models, but we could not do so. The proficiency data available are the CEFR scores of the speakers in the NCSE. These scores are categories, rather than values on a continuous scale, and the speakers

are divided very unequally over the proficiency scores observed (see Appendix 2.1), which prevented us from including proficiency in our models.

First, we looked at the amount of laughter. We analyzed a relative measure for laughter expressing the mean number of laughs per 100 seconds (La/100s).

Secondly, we analyzed the amount of overlapping speech produced by each Spanish speaker. We only considered instances where the Spanish speaker interrupted the Dutch confederate, not the other way around. We calculated the amount of overlap by adding up the durations of the stretches of speech produced by the Spanish speaker while the Dutch confederate was still speaking. In this analysis, we controlled for the total duration of the speech produced within one recording by the Spanish speaker, since we expected that the more speech he or she produced, the greater the amount of overlap would be. Because this total duration of speech was significantly higher in the informal conversations (M = 1604.20 s, SD = 334.70 s) than in the formal interviews (M = 1019.49 s, SD = 207.24 s), we orthogonalized total duration and formality: not the raw total duration was included as a co-variate in the analysis, but the residuals of a linear regression model that predicted total duration as a function of formality.

Thirdly, we analyzed the total number of Spanish words in each recording. Since these numbers were not normally distributed, we reduced the skewness in the data by taking the log of the number of Spanish words, which was then included as the dependent variable. In this analysis, we controlled for the total number of words in each recording, since we expected more Spanish words if the total number of words was higher. Given that there were significantly more words in the informal (M = 4069.62, SD = 1098.58) than in the formal (M = 2677.59, SD = 866.09) recordings, we orthogonalized the variables formality and total number of words: instead of including the raw number of total words in the analysis, we

included the residuals of a linear regression model that predicted the total number of words as a function of formality.

Next, we examined all linguistic features that Biber and colleagues (Biber, 1988; Biber et al., 1998) identified on the involved versus informational dimension and that we were able to test on the basis of the NCSE (i.e. that did not require information about punctuation or contracted forms, for example). These eighteen features are listed in Table 2.3.

Table 2.3

The eighteen linguistic features from Biber and colleagues' (Biber, 1988; Biber et al., 1998) involved versus informational dimension that were included in the present study.

Features characteristic of involved language	
Second person pronouns	Private verbs
'Be' as main verb	Demonstrative pronouns
The pronoun 'it'	First person pronouns
Possibility modals	Indefinite pronouns
Emphatics / Amplifiers	*Wh*-clauses
Verbs in the present tense	*Wh*-questions
Causative subordination	
Features characteristic of informational language	
Attributive adjectives	
Nouns	
Prepositional phrases	
Long words	
High word type/word token ratio	

We investigated whether, as predicted, the formal interviews contained more nouns, prepositional phrases and attributive adjectives than the informal conversations and whether the words were longer and the word type/word token ratio was higher in the formal interviews than in the informal conversations. These features all indicate "a high informational focus and a careful integration of information in a text" (Biber, 1988, p. 104).

We examined whether the informal conversations showed higher frequencies of the thirteen involved features listed in Table 2.3 than the formal interviews. We will now shortly explain why, according to Biber (1988), these features are characteristic of involved language, printing his terminology in italics. The *pronoun 'it'*, *indefinite pronouns* (e.g.

anybody, *everyone*, *somebody*) and *demonstrative pronouns* (e.g. *that, these*, *this*) substitute fuller noun phrases, hence marking a "reduced surface form" (Biber, 1988, p. 106). The *main verb 'be'* is characteristic of fragmented speech with predicative adjectives (e.g. *the dog is small*), as opposed to attributive adjectives (e.g. *the small dog*), which keep the information within a noun phrase. In a similar way *possibility modals* (*can*, *could*, *may*, *might*) "mark a reduced surface form, a generalized or uncertain presentation of information, and a generally fragmented production of text" (Biber, 1988, p. 106). Two features highlight interactive language: *second person pronouns* refer directly to the addressee, whereas *wh-questions* are primarily used when there is a specific addressee to answer them. The expression of opinions, attitudes, thoughts and emotions is also characteristic of involved language. Several features fulfill this function: *wh-clauses*, *first person pronouns*, *private verbs* (e.g. *think*, *believe*) and *causative subordination* (*because*). *Present tense verbs* refer to the immediate context of communication, hence reflecting interactiveness, and together with *private verbs* they generally mark a verbal style as opposed to a style determined by nouns. Lastly, *emphatics* (e.g. *a lot*, *really*), just as *amplifiers* (e.g. *very*, *absolutely*), are characteristic of increased feeling or involvement with the topic.

Whereas Biber (1988) presents emphatics and amplifiers as separate features, we believe that the Spanish users of English in the NCSE do not make the same distinction, but instead consider words such as *really* and *very* to have the same meaning or at least the same function. This idea is supported by an inspection of the emphatics and amplifiers produced by these speakers. Of all emphatics and amplifiers, *very* (amplifier) and *really* (emphatic) are most frequent and, importantly, the contexts in which they were used were very similar. We therefore grouped emphatics and amplifiers together in our analyses.

In his Appendix II, Biber (1988) provides detailed explanations on how he transformed the linguistic features into rules which allowed for computer automated searches.

We used these same rules to count the occurrences of the eighteen linguistic features in the NCSE.

Because of the difference in total number of words between the formal and informal recordings, we analyzed standardized variables (the occurrence per 10,000 words), except for word length, for which we calculated the average word length in number of characters for each recording, and word type/word token ratio, which was calculated as the percentage of unique word types of the total number of word tokens in each recording. Since not all variables were normally distributed, we tested them with Wilcoxon signed-rank tests, which will be reported below. If a variable was normally distributed, we also produced a linear mixed effects model, which in each case yielded comparable results. Again, we applied Bonferroni correction for multiple tests: only those differences with a $p < 0.0025$ were considered to be significant.

Laughter

We observed a fixed effect of formality on the amount of laughter ($\beta = 5.00$, $t(66) = 11.41$, $p < .001$): there was more laughter in the informal recordings ($M = 6.37$ La/100s, $SD = 3.26$ La/100s) than in the formal recordings ($M = 1.37$ La/100s, $SD = 1.30$ La/100s). The final LMER-model including a random slope for formality by speaker was better than a model without this random slope ($\chi^2 = 37.35$, $p < 0.001$). This reveals that the size of the effect of formality on the amount of laughter varies per speaker. The standard deviation of 2.38 La/100s for the random slope of formality by speaker reflects the variation in the size of the effect of formality for individual speakers.

Overlapping speech

As expected, we found that when the total duration of speech in a recording increased, so did the amount of overlapping speech ($\beta = 0.06$, $t(65) = 5.70$, $p < .001$). More importantly, our

model shows that formality had an effect on the amount of overlapping speech ($\beta = 131.79$, $t(65) = 14.63$, $p < .001$): there was more overlapping speech in the informal recordings ($M = 166.32$ s, $SD = 70.62$ s) than in the formal recordings ($M = 34.53$ s, $SD = 20.20$ s). The final LMER-model includes a random slope for formality by speaker, because it proved to be better than a model without this random slope ($\chi^2 = 49.93$, $p < 0.001$). This shows that speakers differ in the size of the effect of formality on the amount overlapping speech. The standard deviation of 50.83 s for the random slope of formality by speaker reflects the variation in the size of the effect of formality for individual speakers.

Spanish words

In line with Dewaele's (2001) results, we found an effect of formality on the number of Spanish words ($\beta = 1.05$, $t(65) = 6.41$, $p < .001$). This number was higher in the informal ($M = 62.35$, $SD = 185.96$) than in the formal speech situation ($M = 18.88$, $SD = 55.60$).

The effect of the total number of words was also significant ($\beta = -0.00044$, $t(65) = -2.51$, $p = .014$). Interestingly, and contrary to our expectations, a higher number of total words correlated with a lower number of Spanish words. An explanation may be found in the likely correlation between the total number of words and speakers' fluencies. Since all informal and all formal recordings are approximately equally long, a lower total number of words may indicate a somewhat lower fluency in English, which may lead a Spanish speaker of English to using more Spanish words. We found support for this hypothesis through an additional analysis in which we included the number of words produced per minute, not the actual number of words produced, as a proxy of fluency: we assumed that a fluent speaker produces more words per time unit than a non-fluent speaker. We produced a linear mixed effects model predicting the number of words produced per minute as a function of the log of the number of Spanish words as a fixed factor and speaker as a random factor. The fixed effect was found to be significant ($\beta = -3.57$, $t(66) = -2.94$, $p < .01$). The negative β-value

indicates that when the number of Spanish words increases, the number of words produced per minute decreases. So if a speaker produces more Spanish words, he or she produces fewer words per minute, which may reflect a somewhat lower fluency. Additional support for this explanation is provided by the Spearman's correlation coefficient between proficiency, as reflected by the speakers' CEFR scores, and the number of Spanish words (r_s = -.57, $p < 0.001$).

Involved versus informational language characteristics

The results of the analyses of the features taken from Biber and colleagues (Biber, 1988; Biber et al., 1998) involved versus informational dimension can be found in Table 2.4. Seven of the eighteen variables differed significantly between the formal and informal speech situation in the direction we hypothesized. Four of these are informational features: as was expected, more nouns, prepositional phrases and attributive adjectives were used in the formal than in the informal speech situation and words were longer in the formal than in the informal situation. Next, as was predicted, three involved features were used more often in the informal than in the formal speech situation: second person pronouns, the pronoun 'it' and forms of 'be' as main verb.

In contrast, four of the eighteen features showed significant differences in the direction opposite to what we expected. These were all involved features that were used more often in the formal than in the informal speech situation: causative subordination, possibility modals, private verbs and verbs in the present tense. We will discuss these four features, among others, in the next section.

Table 2.4

Results of the analyses of the eighteen features taken from the involved versus informational dimension identified by Biber and colleagues (Biber, 1988; Biber et al., 1998). Mean number of occurrences per 10,000 words for both speech situations (average word length in characters, word type/word token ratio in percentages) and effect sizes of the Wilcoxon signed-rank tests.

Feature	Occurrence per 10,000 words (except when indicated otherwise)		
	M_{formal}	$M_{informal}$	Effect size (r)
Significant differences, expected direction ($p < 0.001$*)*			
Nouns	1170.30	935.08	.62
Prepositional phrases	793.06	629.74	.62
Attributive adjectives	187.15	149.34	.48
Word-length	3.26 characters	3.17 characters	.41
Second person pronouns	123.82	169.02	-.41
Pronoun 'it'	160.51	213.22	-.45
'Be' as main verb	152.99	240.31	-.58
Significant differences, unexpected direction ($p < 0.001$*)*			
Causative subordination	85.67	46.22	.54
Possibility modals	59.79	41.53	.51
Private verbs	154.25	101.13	.57
Present tense verbs	565.36	434.49	.61
Non-significant differences			
Wh-questions	4.35	8.20	-
Wh-clauses	10.86	13.08	-
First person pronouns	382.90	413.97	-
Indefinite pronouns	40.01	32.97	-
Demonstrative pronouns	32.72	31.01	-
Emphatics / Amplifiers	169.32	152.58	-
Word type/word token ratio	15.30 %	15.55 %	-

Discussion: register variation

The results above show that the Spanish speakers in the NCSE adapt their language to the speech situation. Note that for our research purposes it is more important that we found differences between the formal and informal speech situations in the NCSE than whether these differences are in the direction that we expected, mostly based on previous research with natives. The differences found show that non-natives make a distinction between formal and informal speech, whether they do so in the same way as natives is a secondary question. We will now discuss and interpret our findings.

Laughter (Garcia, 2013; Glenn, 2010) and overlapping speech (Tannen, 2005) were both expected to occur more frequently in the informal than in the formal speech situation, and both showed such an effect, reflecting a more affective and interactive nature of the speech during the informal, peer to peer conversations. Furthermore, in line with Dewaele (2001), the number of Spanish (L1) words was higher in the informal than in the formal speech situation. This suggests that speakers' ideas about whether inserting L1 words in L2 speech is acceptable or not differ for formal and informal speech situations.

Register variation by the Spanish speakers in the NCSE is also reflected by the results of our analyses of the linguistic features taken from the involved versus informational dimension identified by Biber and colleagues (Biber, 1988; Biber et al., 1998). Interestingly, especially the features that are characteristic of informational discourse present a clear picture. Four of the five informational features we tested differed significantly in the expected direction: the Spanish speakers used more nouns, more prepositional phrases and more attributive adjectives in the formal interviews and the words were longer on average. By doing so, the speakers enhanced the informational density of their language.

We found one informational feature, the word type/word token ratio, to be equal in the formal and informal speech situations, while a higher word type/word token ratio was expected in the formal interviews. Possibly, non-native speakers are hindered by their limited lexicons when trying to carefully select words that carry the intended meanings very specifically. As a consequence, they may not express nuances, but re-use the same general lexical items again and again, which leads to a low word type/word token ratio.

The analyses of the thirteen features linked to involved language show a somewhat more diffuse picture. In general, we expected these features to occur more often in the informal than in the formal speech situation. Three features met this expectation: the pronoun 'it', second person pronouns and 'be' as a main verb. Each reflects a characteristic of involved

language: 'it' marks a reduced surface form by substituting fuller noun-phrases, second person pronouns allow for directly addressing the interlocutor to enhance interactiveness and 'be' as a main verb is mainly used in constructions with a predicative adjective, leading to a more fragmented way of information presentation.

Not all involved features showed a formality effect, possibly because of the positioning of the informal conversations and the formal interviews in the NCSE on the involved-informational scale: the formal interviews are more towards the informational end than the informal, peer to peer conversations, but not at the extreme end of the scale, since they still represent a spontaneous, face-to-face speech situation. Therefore, they also still show some involved characteristics. The six involved features that show no significant effect of formality are *wh*-questions, *wh*-clauses, first person pronouns, indefinite pronouns, demonstrative pronouns and emphatics/amplifiers.

Contrary to our expectations based on Biber's (1988) analysis of English, four of the thirteen features linked to involved communication were used more often in the formal speech situation: private verbs, possibility modals, present tense verbs and causative subordination. We will now discuss these linguistic features in detail.

First, for private verbs and possibility modals the unexpected result may have its origin in a transfer of Spanish encoding of register variation. To recall, in English, the function of private verbs is to express opinions, attitudes, thoughts and emotions and the function of possibility modals is to express some degree of uncertainty (Biber, 1988). In Spanish, the linguistic features that fulfill the same functions tend to co-occur in texts that are representative of a second dimension that Biber et al. (2006, p. 17) call “spoken 'irrealis' discourse”. These features include conditional tense and subjunctive mood. The text genre that has the highest score on this “spoken 'irrealis' discourse” dimension is that of political interviews, but also other spoken genres, including other types of political discourse and

formal meetings, show high scores. The Spanish speakers in the NCSE possibly have attempted to produce language that they considered appropriate for a formal, politically oriented interview in which presenting opinions and some degree of uncertainty about propositions is expected. Since they could not use subjunctive mood nor conditional verb forms in English, for example, they had to rely on linguistic features that fulfill the same functions in English, such as private verbs and possibility modals. Thus, the Spanish speakers in the NCSE may have relied on their knowledge about Spanish formal discourse and used linguistic features to which Biber (1988) ascribes an involved function in English, but a particular *irrealis* function in Spanish (Biber et al., 2006). To the Spanish speakers, the functions that are fulfilled by these involved linguistic features in English are characteristic of political discourse, which makes these features appropriate during the formal interviews in the NCSE.

Secondly, our finding that causative subordination is more frequent in the formal speech situation is not surprising: in this situation the speakers more often formulated complex ideas and complex argumentation. Westin (2002) argued that causative subordination is more frequent if the key objectives of a text are argumentation, explanation and opinion defending, as is the case in the newspaper editorials she studied. This function of causative subordination is also acknowledged by Biber (1988). We therefore assume that the Spanish speakers in the NCSE rely on causative subordination to achieve the particular communicative goals of expressing complex arguments or defending views during the formal interviews.

Thirdly, according to Biber (1988), present tense verbs refer to the immediate context of communication and are therefore expected to be used more in involved than in informational speech situations. However, if the topics are all current affairs, as is the case in the formal speech situation in our study, present tense verbs are indispensable. This may

explain the more frequent use of present tense verbs in the formal speech situation and, again, illustrates the Spanish speakers' way of appropriately adapting their speech to the situational context.

General discussion

In the present study, we investigated whether Spanish speakers of English show register variation in speech situations in which English is used as a lingua franca. In order to answer this question, we compiled the Nijmegen Corpus of Spanish English (NCSE), in which we manipulated the formality of the speech situation. Thirty-four Spanish speakers of English engaged in both an informal, peer to peer conversation and a formal interview with Dutch speakers of English. The Spanish speakers perceived the communication as natural in both the informal and the formal speech situations, despite the laboratory setting. Moreover, the speakers' perception of the formality of the two speech situations showed that our manipulation was successful. Consequently, the NCSE is a rich collection of formal and informal speech produced by the same Spanish users of English. The recordings are of laboratory quality and augmented by orthographic transcriptions and video recordings. These contents allow for within-speaker studies of the effect of formality of the speech situation on many (linguistic) variables and from various theoretical approaches.

Based on the NCSE, we carried out several analyses that revealed that Spanish users of English show register variation on a number of language characteristics. They laugh more, produce more overlapping speech and use more Spanish words in an informal than in a formal speech situation. Moreover, the language that they produce during an informal conversation is more interactive/involved than the language they produce during a formal interview, which is more adapted for a dense presentation of information while preserving some interactive/involved characteristics. The presence of involved linguistic features during

the formal interviews can be ascribed to the fact that these are also face-to-face speech situations.

Our findings complement previous work on the effect of formality on non-native language, which had focused mostly on phonology (e.g. Adamson & Regan, 1991; Thompson & Brown, 2012), by investigating variation on other linguistic levels. Moreover, given the proficiency levels of the speakers in the present study (mostly B1, with a maximum of B2, see Appendix 2.1), we conclude that even L2 users of English who have not (yet) reached a high proficiency level show register variation. These findings partially go against previous work on L2 register variation (Dewaele & Wourm, 2002; Geeslin & Long, 2014; Romero-Trillo, 2002; Thompson & Brown, 2012) that states that L2 sociolinguistic competence comes with higher proficiencies. Our results suggest that even at early stages of L2 acquisition some kind of sociolinguistic competence is already present.

This could have its origin in speakers' reliance on L1 sociopragmatic knowledge. Since all speakers in the NCSE have a fully developed L1 (Spanish) language system, they will also have highly developed sociolinguistic competence in their L1. Importantly, Spanish and English native speakers signal the register of their speech in similar ways: in both languages, the most important dimension of register variation opposes involved to informational language (Biber, 1988; Biber et al., 2006). Moreover, the languages are similar in the linguistic features that are representative of this dimension. Consequently, Spanish speakers can rely on their intuitions based on Spanish in order to produce an appropriate speech style in English, at least when it comes to the involved-informational dimension.

It would be valuable to expand our work on register variation to ELF speakers with other mother tongues. L2 users of English with different L1s may rely on different formality conventions that exist in their L1s and apply these to their English. This may be particularly true for ELF interactions in which L1 speakers are engaged with very different

cultural/linguistic backgrounds, for example speakers with a Western European L1 and speakers with an Asian L1. In these cases, besides linguistic difficulties, additional problems may arise due to cultural aspects of register variation.

Furthermore, an interesting avenue for future research would be to investigate the effect of L2 register choices on interlocutors. For instance, we have seen that the language behavior of the Spanish speakers in the NCSE generally followed predictions based on native speakers of English, but we also found that they relied more than expected on private verbs and possibility modals during the formal interviews. In Spanish, the particular functions that are fulfilled by these features are associated with formal (political) interviews, but when Spanish speakers overuse them in English formal speech, interlocutors may perceive a high level of insecurity, which could have repercussions for the image of the Spanish speakers as well (Geeslin & Long, 2014).

We conclude from the present study that Spanish users of English show register variation when they speak English. They laugh more and produce more overlapping speech and Spanish words in informal than in formal speech. Moreover the language in the formal interviews in the NCSE is more suitable for dense information presentation than the language in the informal, peer to peer conversations. In these latter, in contrast, the language was more focused on interactiveness than in the formal interviews. So, not only did the speakers in the Nijmegen Corpus of Spanish English perceive a difference in formality between the two recordings they participated in, but this difference was also reflected by their language behavior.

Appendix 2.1

Individual Spanish speakers' proficiency levels

Male speakers	CEFR proficiency level	Female speakers	CEFR proficiency level
M1	B1-	F1	A2
M2	B1	F2	B1
M3	B1	F3	B1
M4	B1	F4	A2
M5	B1	F5	A2+
M6	A2	F6	B1+
M7	A2	F7	A2+
M8	B1	F8	B1+
M9	A2	F9	B1
M10	A2	F10	B1+
M11	A2	F11	B1-
M12	B1	F12	B2-
M13	A2	F13	B2-
M14	B1+	F14	B1
M15	B1+	F15	A1
M16	A1	F16	B1-
M17	B2	F17	B1

Number of Spanish speakers by proficiency level

CEFR proficiency level	Number of speakers
A1	2
A2	8
A2+	2
B1-	3
B1	11
B1+	5
B2-	2
B2	1

Appendix 2.2

Excerpts of formal and informal speech produced by a female Spanish speaker (SP_F2) in interaction with female Confederate 1 (Conf1; informal conversation) and male Confederate 2 (Conf2; formal interview)

Formal interview		Informal conversation	
SP_F2:	eh I think that the prest\- the main reason [breath] is the ^speculuc\- spe\- -/culation about the buildings [breath] people working built a lot of flat [breath] eh and it cost a lot more than the real value of this this house	SP_F2:	in Andorra
Conf1:	*hm*	*Conf2:*	*wh\- is that far?*
SP_F2:	ok? [breath] and some people [click] eh have sorry some people eh in in this moment [breath] eh I do n\- [breath] obtain a lot of money	SP_F2:	[breath] hm [click] near *Pirineos
Conf1:	*hm*	*Conf2:*	*[laugther] oh th\- b\- th\-*
SP_F2:	ok for a work that [breath] is not eh necessary	SP_F2:	between France and Spain
Conf1:	*yes*	*Conf2:*	*Pyrenees ok*
SP_F2:	eh f\- eh for example	SP_F2:	[breath]
Conf1:	*give me an example*	*Conf2:*	*oh yeah oh that is quite far then*
SP_F2:	[click] [breath]	SP_F2:	a bit
Conf1:	*give us an example*	*Conf2:*	*yeah I have never been skiing I do not is it do you like skiing?*
SP_F2:	eh [click] I think that eh nurse [breath] eh it is is more important than #ts eh *^constructor	SP_F2:	[breath] [start laugther] no no [end laugther]
Conf1:	*hm*	*Conf2:*	*no? [laugther] but did you go?*
SP_F2:	of building ok [breath]	SP_F2:	no m\-
Conf1:	*hm*	*Conf2:*	*no*
SP_F2:	and the the money which gain a nurse [breath] is e\- eh [breath] it is more small than #ts than the *^constructor ok?	SP_F2:	but my partners hm eh hm went to this trip
		Conf2:	*your your boyfriend?*
		SP_F2:	partn\- no hm sorry [breath]
		Conf2:	*eh [breath]*
		SP_F2:	partner
		Conf2:	*your partner*
		SP_F2:	*companeros *que *no *se *acuerdo *a *ver
		Conf2:	*is it friend?*
		SP_F2:	yes m\- my [breath] friend of class

3 Three

Tres

Drie

"These things that you use to communicate with other people"

Communication strategy use by Spanish speakers of English in formal and informal speech

This chapter is based on:

Kouwenhoven, H., Ernestus, M. & Van Mulken, M. (submitted). "These things that you use to communicate with other people". Communication strategy use by Spanish speakers of English in formal and informal speech.

Abstract

Non-native (L2) speakers often use communication strategies (CSs) to prevent or overcome linguistic or communicative difficulties. This within speaker study compares Spanish L2 English speakers' CS use in an informal, peer to peer conversation and a formal interview. The 15 hours of informal and 9.5 hours of formal speech from the Nijmegen Corpus of Spanish English were coded for 19 different CSs. First, we found that speakers prefer self-reliant CSs, which allow them to continue communication without their interlocutor's help. Secondly, of the self-reliant CSs, relatively more informative strategies (e.g. reformulation) are used more often in formal speech, whereas relatively less informative strategies (e.g. code-switches) are used more in informal speech. Lastly, some speakers were more affected by a change in formality than others. We propose that general principles of communication, notably the protection of positive face and the least effort and cooperative principles, lie behind speakers' strategy selection.

Introduction

When speakers (temporarily) cannot find a word, or when they anticipate that their interlocutor(s) may not know a word, they can use strategies to keep communication flowing. The speaker who pronounced the title of this article, for example, was a Spanish future telecommunications engineer who could not come up with the word *antennas* in English, and instead uttered "these things that you use to communicate with other people". Native (L1) speakers may show such strategic linguistic behavior, but communication strategies (CSs) can be particularly valuable tools for non-native (L2) interlocutors. The main objective of this chapter is to compare CS use by Spanish L2 speakers of English in a formal and an informal speech situation in order to find out whether the situational context has an influence on L2 speakers' CS use.

CSs can be defined as "every potentially intentional attempt to cope with any language-related problem of which the speaker is aware during the course of communication" (Dörnyei & Scott, 1997, p. 179). Different approaches towards the study of CSs are conceivable based on this definition. Within the Second Language Acquisition (SLA) paradigm, scholars have taken a speaker-oriented approach focusing on problems caused by (temporary) gaps in speakers' linguistic knowledge (see e.g. Dörnyei & Scott, 1997, for an overview of SLA studies of CSs) in order to ultimately help L2 learners develop their 'strategic competence' (Canale & Swain, 1980; see also Nakatani, 2005, for a discussion of several definitions). The examples below illustrate how speakers may use CSs to talk about a corkscrew without actually using the word 'corkscrew' by describing it, as in (1), or by using words with approximately the same meaning, as in (2).

(1) I need that curly thing you open wine bottles with.

(2) I need *a bottle opener*.

More recently, scholars within the English as a *lingua franca* (ELF) paradigm have focused on CSs as instruments to prevent (potential) communication problems (see Björkman, 2014, for an insightful discussion of the differences between the SLA and ELF approaches to CSs; Mauranen, 2006). The ELF approach is interaction oriented, based on Conversation Analysis methodology (see e.g. Björkman, 2014). For instance, a speaker may anticipate that the other(s) might not know the word 'corkscrew', so instead of using 'corkscrew' may use the CSs from examples 1 and 2 to pre-empt potential difficulties.

Both the SLA and the ELF paradigms have contributed considerably to the study of CSs, but also have their drawbacks. SLA scholars were the first to acknowledge the importance of CSs, notably for L2 speakers. For the speakers in SLA studies and for the SLA scholars who study them, the objective is language acquisition, which is why data are usually collected in classroom settings, or similar learning contexts. Such settings impose a particular social environment with very specific social roles, social relations and communicative purposes (Mauranen, 2011). As a consequence, findings might not be generalizable to real-life speech situations. Within the ELF paradigm, CS use has been investigated in such real-life speech situations. The ELF scholars' qualitative approach provides in-depth insights into the interactional moves interlocutors make when preventing or resolving miscommunication and how they use CSs (see e.g. Björkman, 2011, 2014; Mauranen, 2006). However, the descriptive Conversation Analysis methodology is unsuitable for quantitative, comparative analyses of CS use.

Such a comparative approach would be a valuable addition to CS research, since many people use English as a lingua franca in speech situations that range from very basic and casual to very formal and high stakes interactions. Moreover, SLA studies have consistently shown that the task that speakers perform influences CS use (see e.g. Poulisse, 1993; Poulisse & Schils, 1989). The notions of task and situational context are closely

related: "task-induced variation […] is best considered as a *blanket term* to cover the variability evident when learners perform different tasks, and is ultimately traceable to […] the *linguistic, situational, or psycholinguistic context*" (Ellis, 1994, p 135, italics ours). In this sense, task-induced variation is comparable to register variation, which is induced by changes in the situational context, including communicative purpose (Biber & Conrad, 2009). Given the relatedness between task and situational variation, we believe that differences in CS use should also emerge in comparisons of speech from different situational contexts.

To our knowledge, no comparative studies have been carried out to investigate the influence of the situational context on speakers' CS use; this influence is only suggested based on the task effects found in SLA studies. This chapter presents a comparative study in which we contrast informal, peer to peer conversations with formal interviews. Our study will complement work on CS use from the SLA paradigm, since it will reveal whether the task effects that were found reflect L2 users' language behavior in situations that are not aimed at language acquisition, and work from the ELF paradigm, since it will provide quantitative, comparative results to this field of research which is dominated by qualitative methodology. Björkman (2011), for instance, did not statistically compare the lectures and student group-work sessions in her study. However, she suggests in her discussion that the situational context may have been a factor that can explain the differences she found between the two speech situations.

The data for this study come from the Nijmegen Corpus of Spanish English (NCSE), which contains recordings of two speech situations, involving 34 naïve Spanish speakers and two Dutch confederate speakers of English (see Chapter 2, for a detailed description of the corpus collection procedure and for a discussion of the naturalness of the data). The NCSE takes an intermediate position between ELF corpora (see e.g. Mauranen, Hynninen & Ranta, 2010; Seidlhofer, 2010) and SLA corpora (see e.g. Granger, Dagneaux, Meunier & Paquot,

2009), since the speakers were no L2 learners but used their L2 for actual communicative purposes, as in ELF corpora, but some control was exerted over the speech situations, as in SLA corpora. Consequently, the NCSE has its own, unique methodological advantages. Importantly for this study, all Spanish speakers were recorded in both an informal and a formal speech situation, allowing for within speaker comparisons of their CS use.

We will investigate the Spanish speakers' CSs use in order to answer three main research questions: 1) which strategies are used most often, 2) do speakers use certain CSs more often in a formal speech situation and other strategies in an informal speech situation, and 3) is there variability in the effect of formality on individual speakers' CS use?

We take a speaker oriented approach that is comparable to the SLA perspective. However, we will also include strategies that the Spanish interlocutors may use in their role as listeners, for instance when they do not understand their interlocutor. Speakers have a wide range of CSs at their disposal and SLA researchers have proposed various taxonomies to group related strategies together (see e.g. Dörnyei & Scott, 1997, for an overview). Poulisse (1993) points out that the SLA taxonomies often lack support from a theory of language use. We therefore propose our own taxonomy that is based on such theories.

We make a first major division of CSs based on Brown and Levinson's (1987) politeness theory and a second major division based on an adaptation of Poulisse's (1993) explanation of CS use within Levelt's (1989) model of speech production and her incorporation of two general principles of communication: the *least effort principle* and the *cooperative principle* (for definitions of all CSs included in our study and examples taken from the NCSE, see Appendix 3.1).

Positive face reflects a speaker's desire to be seen as competent and to be appreciated by others (Brown & Levinson, 1987). We propose that CSs can be more or less threatening to

a speaker's positive face and hypothesize that L2 speakers tend to use CSs that protect their positive face rather than CSs that are face threatening.

Our first major division distinguishes three groups of CSs (see Table 3.1). First, *self-reliant strategies* (e.g. circumlocutions, code-switches and approximations) allow a speaker to maintain the flow of communication and are therefore beneficial to the speaker's positive face. Secondly, when a speaker uses one of the *interdependent strategies*, this is face threatening, since it reveals that the speaker (temporarily) fails to perform as a competent language user and requires assistance. Thirdly, *uncertainty strategies* threaten the speaker's positive face even more severely, since the speaker not only sends a message of (temporary) incapacity to produce or perceive language, but in addition shows no intention of coming to a solution for the communication problem. Speakers either abandon the production of the message altogether or merely verbally reveal having linguistic difficulties.

Table 3.1

Division of communication strategies into three categories, ranging from face saving to face threatening (Brown & Levinson, 1987): self-reliant, interdependent and uncertainty strategies.

Face saving	←→	Face threatening
Self-reliant strategies	*Interdependent strategies*	*Uncertainty strategies*
Code-switching	Direct appeal for help	Message abandonment
Repetition for emphasis purposes	Indirect appeal for help	Indicating linguistic difficulty
Fillers	Comprehension check	Expressing non-understanding
All-purpose words	Request for repetition	Signaling overall insecurity
Approximation	Request for clarification	
Foreignizing	Request for confirmation	
Reformulation		
Exemplification		
Circumlocution		

Our second major division categorizes strategies on a continuum that assumes the influence of the situational context. The suitability of a strategy in a given situational context is governed by two general principles of communication: the least effort principle and the cooperative principle (Poulisse, 1993). Poulisse (1993) states that these two principles are in conflict: the former is most beneficial to the speaker, since it "dictates that the speaker should use the [CS] which requires the least processing effort" (p. 184), whereas the latter is most

beneficial to the interlocutor, because it "requires [from the speaker] to make sure that his [CS] is comprehensible to the interlocutor(s)" (p. 184; see also Horn, 2005, for a comparable approach in the field of pragmatics). Consequently, there is a trade-off between respecting the least effort principle and the cooperative principle: CSs can be placed on a continuum from relatively effortless and uncooperative strategies to cognitively relatively demanding and cooperative strategies.

Poulisse (1993; see also Poulisse & Schils, 1989) found that non-natives used lengthy and informative strategies in tasks where the full extent of their messages had to be understood, hence moving towards the cooperative end of the continuum. When speakers could accept that not all details of their messages were understood, they opted for less effortful strategies, hence positioning themselves towards the least effort end of the continuum.

Poulisse (1993) focused on compensatory strategies (see also Færch & Kasper, 1983), which roughly coincide with our *self-reliant strategies*, and which according to Björkman (2014) can be argued to be most important in ELF communication. Poulisse (1993) subdivides compensatory strategies based on the processing effort they require during speech production as modeled by Levelt (1989), and how cooperative they are (Grice's, 1975, cooperative principle). We take a comparable approach to place the self-reliant strategies along the continuum defined by the least effort and cooperative principles (see Table 3.2).

Table 3.2

Positions of self-reliant strategies on a continuum from relatively effortless strategies (least effort principle) to relatively cognitively demanding strategies (cooperative principle).

Least effort		←→		Cooperative
Code-switching	All-purpose words	Approximations	Foreignizing	Reformulations
Repetition for emphasis purposes				Exemplifications
Fillers				Circumlocutions

In Levelt's (1989) model of speech production, a first component (*conceptualizer*) produces a preverbal message, which holds information about the content and the form of the message to be produced. The next component (*formulator*) takes the preverbal message as input and handles the grammatical and phonological encoding to produce a phonetic plan. The third component (*articulator*) then takes the phonetic plan and produces the acoustic speech signal.

From a CS point of view, speakers may replace a single lexical item with another, leaving the preverbal message largely intact, which is cognitively relatively undemanding (Poulisse, 1993: *substitution strategies*). The inserted lexical item may be a *code-switch* (e.g. Spanish *casa* for 'house') or another L2 item (*approximations*: e.g. *fruit* for 'apple'; or *all-purpose words*: e.g. 'thing', 'stuff'). We propose that these CSs do not take the same position on the continuum from least effort to cooperative strategies. Since ELF interlocutors usually have no, or little, knowledge of the other speakers' L1s, *code-switches* may be less cooperative than *all-purpose words*, which in turn can be said to be less cooperative than *approximations*. We add to the least cognitively demanding strategies the use of filler words (e.g. *like*, *I mean*, *you know*) and repetition for emphasis purposes.

Speakers may also apply L2 morphological and/or phonological encoding procedures on L1 words (Poulisse, 1993: *substitution plus strategies*), which we refer to as *foreignizing* in our study (e.g. *retrate* for 'portrait', from Spanish *retrato*). Since L2 rules are applied to L1 words, foreignizing is relatively cognitively demanding. It may be beneficial to interlocutors, because the uttered lexical item better matches the L2 phonology and/or morphology and consequently might come closer to the target item, as does *retrate*.

When speakers make one or more changes in the preverbal message (e.g. when they describe a lexical item; Poulisse, 1993: *reconceptualization strategies*), this is most

cognitively demanding. Like Poulisse (1993), we place such strategies (circumlocutions, reformulations and exemplifications) at the cooperative end of the continuum.

We hypothesize that speakers can be placed more towards the cooperative end of the continuum in a formal speech situation in which information exchange is the primary purpose of communication. Consequently, we expect them to use more cognitively demanding CSs. In contrast, we expect speakers to use less cognitively demanding CSs in an informal speech situation, positioning themselves more to the least effort end of the continuum.

Our third research question revolves around individual differences in the effect of the situational context on speakers' CS use. The differences that Björkman (2011) found between lectures and group work sessions, and the task effects reported by Poulisse (1993) and Poulisse and Schils (1989), may also have been caused by speakers' personal preferences. We will investigate the same speakers in different speech situations and quantify the individual variation in the effect of the speech situation on CS use.

Method

Data: the Nijmegen Corpus of Spanish English

The NCSE holds recordings of one-on-one communication in English between 34 Spanish speakers (17 female, mean age = 21.44 years) and a Dutch confederate in an informal, peer to peer conversation, and with another Dutch confederate in a formal interview. The Spanish speakers' proficiency levels ranged from A1 to B2 of the CEFR (Council of Europe, 2001), with 29 of the speakers in the narrow range from A2 to B1. The Spanish speakers rated the communication in both speech situations as natural, and the interviews as more formal than the peer to peer conversations. The formality difference was also reflected in their language (see Chapter 2 for details on the recording procedures and the linguistic differences between the two speech situations).

The orthographic transcriptions of the speech produced by the Spanish speakers are the basis for the present study. All 15 hours of informal and 9.5 hours of formal speech were divided into short stretches, usually confined by natural pauses, and orthographically transcribed. These short stretches will be referred to as utterances in the remainder of this chapter. The Spanish speakers produced 55,910 utterances in total, with a mean duration of 1.59 seconds, and containing 4.22 words on average.

Coding

Dörnyei and Scott's (1997) review article includes a list of 33 CSs identified by previous SLA studies (p. 188-194), based on which we developed our coding scheme as follows.

Since we focused on verbal communication only, strategies such as 'mime' were left unstudied. Then, the CSs that require the speakers' retrospective comments for identification (e.g. 'message reduction', 'omission', 'replacement', 'use of similar sounding words' and 'feigning understanding') were left out, since we had no access to the speakers' comments. Moreover, retrospective comments have drawbacks: speakers may not remember the reasons for their particular linguistic behavior and, importantly, they may provide socially desirable comments, or comments that protect their self-images (Van de Haak, Schellens & De Jong, 2003).

We also were reluctant to include 'over-explicitness' and 'mumbling'. Dörnyei and Scott (1997) define over-explicitness as using more words to achieve a certain goal than would be considered 'normal' in a native context. Since it is difficult to define what is normal in a given situation, and since we wanted to avoid evaluating the L2 speakers against native norms, over-explicitness was not taken into account. As for 'mumbling', the few occurrences of incomprehensible speech in the NCSE were not transcribed, which renders this strategy otiose.

Next, we merged closely related strategies together since distinguishing between them would either overcomplicate the analyses or be uninformative. 'Word-coinage', 'foreignizing' and 'literal translation' were combined into 'foreignizing', which entailed the direct application of L2 characteristics on L1 words. We clustered 'restructuring', 'self-repair', 'self-rephrasing' and 'retrieval' into 'reformulation', which covers a speaker's search for an alternative that he or she considers satisfactory.

The selection and combination of strategies from Dörnyei and Scott (1997) led to a first coding scheme with 16 strategies. We then proceeded with an iterative-inductive process to fine-tune the coding scheme. Transcriptions of three informal and two formal recordings (4773 utterances) from the NCSE were coded by two separate coders, who discussed their results after each transcription. Overall, there was strong agreement, and in cases of disagreement, little discussion was necessary to come to a solution. Importantly, this procedure led to further fine-tuning of the definitions of each strategy, such that they were more consistently distinguishable from each other. Moreover, we defined three strategies that were not in Dörnyei and Scott's (1997) list, but that both coders considered relevant additions based on the data in the NCSE: 'repetition for emphasis purposes' (e.g. "the empire state building is *high*, *high*, *high*"; see also Björkman, 2011), 'exemplification' (e.g. "when you come to the next *green, go or red, stop*"; see also Nakatani, 2005) and 'signaling overall insecurity', which we defined as the indication of an overall concern about one's own capabilities in English (e.g. "my English is not so good"; as opposed to the strategy 'indicating linguistic difficulty', which is local and has to do with an immediate language problem; see also Van Mulken & Hendriks, 2015).

The final coding scheme consisted of 19 CSs. Definitions and examples from the NCSE of all 19 strategies can be found in Appendix 3.1, which also reflects the division into self-reliant, interdependent and uncertainty CSs.

The first author coded the remaining recordings in the NCSE. For each of the 55,910 utterances in the NCSE, he indicated which CSs were present. Some of the strategies stretched over multiple utterances (especially circumlocution and reformulation). If this was the case, only the utterance in which a strategy was initiated was taken into account in the quantitative analyses, so that the occurrence of a certain strategy was not overestimated.

Statistical analyses

We analyzed the impact of the formality of the speech situation on CS use by fitting logistic linear mixed effects models with the binomial link function, one for each individual strategy. The dependent variable in these models was the presence or absence of the strategy in an utterance. In our models we tested for fixed effects of formality, as our predictor of interest, and of gender and utterance length[1] (i.e. the number of words in an utterance) as fixed control variables. We included speaker as random factor.

We investigated the effect of formality on each individual speaker, by testing for random slopes of formality by speaker. This random slope reflects the sensitivity of the individual speakers to the effect of formality. If the fixed effect of formality shows that, for the group of speakers as a whole, informal utterances are more probable to hold a certain

[1] The control predictor utterance length was correlated with formality: a linear mixed effects model with utterance length as the dependent variable and formality as the predictor showed a highly significant effect of formality ($t(55{,}908) = -16.42$, $p < .001$, $\beta = -0.54$). Utterances were half a word shorter, on average, in the informal than in the formal speech situation. In order to avoid including correlated predictors in our linear mixed effects models, we could orthogonalize the predictors formality and utterance length, by regressing utterance length on formality and including the residuals of this analysis ($\text{UtteranceLength}_{resid}$) as a predictor together with formality. However, Wurm and Fisicaro (2014) have revealed possible unwanted side-effects of this procedure and express doubts about its usefulness. We therefore opted not to orthogonalize the variables in the models that we present in the results section of this chapter. However, we also ran our models with $\text{UtteranceLength}_{resid}$, which in each case yielded similar results.

strategy than formal utterances, inspection of the random slopes for individual speakers may reveal that this effect is stronger for one speaker than for another. Moreover, when a fixed effect of formality is absent, there can still be individual variation: one speaker may be more likely to use a strategy in informal speech, whereas another speaker may be more likely to use the same strategy in a formal speech situation.

Inclusion of formality as both a fixed factor and a random slope also has a methodological advantage. Not including a random slope for formality may lead to type-1 errors, since we may falsely observe an effect of formality for the group of speakers as a whole, which in reality is caused by only a small number of speakers. To test the significance of the random slope for formality, we performed likelihood ratio tests comparing models with and without the random slope.

In the statistical models reported below, we only included fixed and random predictors and random slopes that were significant.

Results

Frequencies of use of communication strategies

The Spanish speakers used one or more CSs in 15.8% of all utterances (8,853 of 55,910). There was large variation in the frequency of use of each strategy as shown in Figure 3.1. Ten CSs were used less than two times per recording, on average. These include all interdependent strategies, and three of the four uncertainty strategies.

Nine CSs were used more frequently than two times per recording on average. Eight of them were self-reliant strategies (for examples taken from the NCSE, see Appendix 3.1): reformulation, code-switching, foreignizing, approximation, circumlocution, all-purpose words, repetition for emphasis purposes, and the use of fillers. One uncertainty strategy, the

indication of an immediate linguistic difficulty, was also used more frequently than two times per recording on average.

Except for a new variable called 'overall CS use', which expressed the presence of any of the 19 strategies in a particular utterance, we only examined the impact of the situational context on the use of each of the nine most often frequently used CSs. This leads to a total of 10 separate variables for which we fitted linear mixed effects models. We set our α-level at .005 to correct for multiple comparisons.

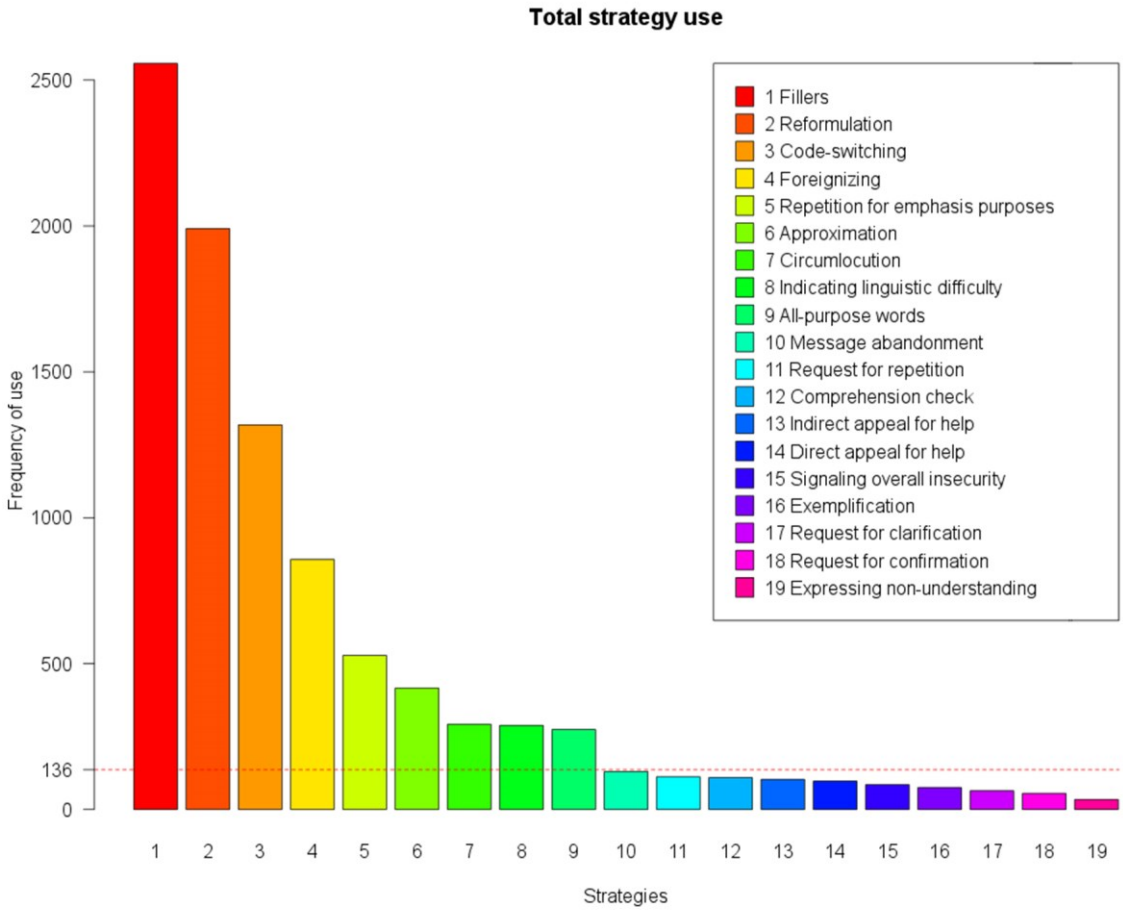

Figure 3.1

Frequencies of use in the Nijmegen Corpus of Spanish English of all 19 communication strategies in the coding scheme. The dotted line indicates an average use of a strategy of two times per recording.

The influence of situational context on overall communication strategy use

We found no simple fixed effect of formality on overall CS use, but the random slope for formality by speaker was significant: half of the speakers used more strategies in formal speech and the other half used more strategies in informal speech. The size of the effect also varied considerably between individual speakers: some speakers were more affected by the change in formality than others.

Unsurprisingly, longer utterances were more likely to include a strategy. This effect was significant ($p < .001$) in each of the models described in this section. Since utterance length was merely a control variable, it will not be discussed separately for the remaining models except when it showed an interaction with another predictor.

For overall CS use, we found an interaction between utterance length and formality: the effect of utterance length was larger in the informal than in the formal speech situation ($z(55{,}908) = 3.46$, $p < .001$), which reveals that a long utterance in informal speech is more likely to contain a CS than a long utterance in the formal speech situation.

The influence of situational context on individual strategies

A summary of the significant results in the analyses of the nine most frequently used individual strategies can be found in Table 3.3.

Table 3.3

Results for the effect of formality on the use of the nine most frequent communication strategies; z-scores for the simple fixed effect of formality and χ^2-values for the likelihood ratio tests to compare models with and without a random slope for formality by speaker (n.s. means 'not significant').

Communication Strategy	*z*-value (*df* : 55906-55908) of the fixed effect of formality	χ^2 (*df* = 2) for the random slope of formality by speaker
Fillers	*n.s.*	27.83
Reformulation	-5.39	*n.s.*
Code-switching	3.16	14.42
Foreignizing	-3.79	14.69
Repetition for emphasis purposes	5.04	37.54
Approximation	*n.s.*	7.25
Circumlocution	*n.s.*	*n.s.*
Indicating linguistic difficulty	*n.s.*	*n.s.*
All-purpose words	-4.60	17.18

Fillers

We found no simple fixed effect of formality on the use of filler words (e.g. *like*, *I mean*, *you know*), but the random slope for formality by speaker was significant: about half of the Spanish speakers in the NCSE used more fillers during the formal interview, whereas the others used more fillers in the informal conversation.

We also found an interaction effect of formality and utterance length on the use of fillers ($z(55{,}906) = 6.72$, $p < .001$): longer utterances are more likely to contain one or more filler words in the informal than in the formal speech situation.

An interaction was also found between gender and utterance length: the effect of utterance length was smaller for male speakers than for female speakers ($z(55{,}906) = -3.06$, $p < .005$). When female speakers produced longer utterances, these were more likely to contain one or more filler words than when male speakers produced longer utterances.

Reformulation

A fixed effect of formality showed that reformulation occurred more often in the formal speech situation, in 4.22% (869 of 20,572) of the utterances, against 3.10% (1,096 of 35,338) of the utterances in the informal speech situation.

Code-switching

We found a fixed effect of formality on the number of code-switches, which were more frequent in the informal than in the formal speech situation. Of all informal utterances, 2.68% (947 of 35,338) contained at least one code switch, whereas this was the case for 1.73% (356 of 20,572) of the formal utterances. There was significant variability in the effect of formality for individual speakers, but all showed more code-switching in the informal speech situation, with the exception of three speakers who showed virtually no effect of formality.

Foreignizing

Foreignized words were produced more frequently during the formal interview (in 1.87% of the utterances; 384 of 20,572) than during the informal conversation (in 1.29% of the utterances; 456 of 35,338). The size of the effect of formality differed significantly per speaker, but all speakers used more foreignizing in the formal than in the informal speech situation, except for one speaker who showed virtually no effect of formality, and one speaker who showed an effect in the opposite direction.

Foreignizing and code-switching are closely related in our taxonomy: code-switching is the relatively cognitively effortless insertion of an L1 lexical item, while foreignizing involves some cognitive effort by the speaker to make the lexical item more L2-like before it is uttered. We investigated how these two strategies interacted by fitting a linear mixed effects model that predicts the presence of foreignizing based on the fixed factors 'presence of code-switching' and formality. We found fixed effects of formality ($z(55{,}906) = -5.00$, $p < .001$, $\beta = -0.35$), confirming the influence of formality on the use of foreignizing, and of 'code-switch present' ($z(55{,}906) = 3.61$, $p < .001$, $\beta = 0.93$), which shows that when an utterance contained a code-switch, it was also more likely to contain a foreignized word, if formal and informal speech are taken together.

However, most importantly, there was also a significant interaction between the factors code-switching and formality ($z(55{,}906) = -3.35$, $p < .005$, $\beta = -1.46$). We took a closer look at this interaction with two separate linear mixed effects models: one for formal and one for informal speech. This revealed that when a code-switch was present in an utterance, the probability of a foreignized word also being present was only higher in the formal speech situation ($z(20570) = 3.33$, $p < .005$) but not in the informal speech situation ($z(20570) = -1.30$, $p > .01$). In other words, while a code-switch seems to suffice in the speakers' eyes to prevent or overcome communication difficulties during the informal conversation, they might not consider it sufficient during the formal interview, in which speakers are more likely to also add foreignized words.

Repetition for emphasis purposes

Adding emphasis by repeating a word occurred more often in informal speech, in 1.22% (432 of 35,338) of the utterances, than in formal speech, in 0.46% (94 of 20,572) of the utterances. The speakers varied significantly in their sensitivity to formality, but all speakers showed a formality effect in the same direction, except for one speaker, who seemed to show a small effect in the opposite direction.

Approximation

We found no fixed effect of formality on the use of approximations, but the random slope for formality by speaker was significant. All but seven speakers used more approximations in the formal speech situation. Three speakers showed virtually no effect of formality and four speakers showed relatively small effects in the opposite direction.

All-purpose words

A fixed effect of formality on the use of all-purpose words was found: in the formal speech situation, 0.78% (161 of 20,572) of the utterances contained an all-purpose word, against

0.29% (102 of 35,338) of the informal utterances. The random slope for formality by speaker was also significant: all speakers used more all-purpose words in the formal interview than in the informal conversation, except for one speaker who showed virtually no effect of formality.

General discussion

This chapter reports on a comparative study of CS use by Spanish speakers of English in an informal, peer to peer conversation and a formal interview. It complements previous SLA work, since we investigated if classroom task effects on CS use are illustrative of the impact of situational context on CS use in settings that are not aimed at language acquisition. It complements ELF studies, since we took a quantitative, comparative rather than a qualitative approach.

The Spanish speakers of English used CSs in almost 16% of all utterances they produced, but some strategies were employed much more frequently than others. Inspection of the frequencies of use of the 19 strategies shows that the Spanish users of English in the Nijmegen Corpus of Spanish English rarely used interdependent and uncertainty CSs but preferred self-reliant CSs. We explain this finding by the Spanish speakers' concern with their positive face (Brown & Levinson, 1987): as long as they are able to continue communication on their own, they may be viewed as competent language users, whereas asking for assistance, emphasizing one's own weakness or leaving a message unfinished, is harmful to the image of a competent speaker. In this light, it may seem surprising that the indication of linguistic difficulty, which was originally classified as an uncertainty strategy, was among the most frequently used strategies. A closer look at the data, however, revealed that indicating linguistic difficulty may be seen as a time-gaining strategy, instead of as an

uncertainty strategy (examples (3) and (4); see also Dörnyei & Scott's, 1995, category of indirect strategies) and fulfill a function that is similar to that of filler words.

(3) *I do not know in English how it is called* […] eh *the exam you have to take before attending university*

[indication of linguistic difficulty, followed by a circumlocution]

M15_I_118

(4) "just on the on the side [breath] I mean you can't go into the into the field like […] you can sit on the *I do not know how to say* in the bench"

M4_I_243-246

The frequency counts answer our first research question, and support the first division in our taxonomy of CSs into self-reliant strategies on the one hand, and interdependent strategies and uncertainty strategies on the other hand. The frequencies of use provide no evidence for a distinction between the latter two. Nevertheless, our findings suggest that positive face plays a role in speakers' selection of CSs: self-reliant strategies can be used as instruments to protect the L2 speakers' positive face, whereas interdependent and uncertainty strategies may be threats to the positive face.

An alternative explanation is that CSs that do not allow speakers to effectively communicate their intended messages are generally largely absent from ELF interactions, since in real-life goal-oriented communication speakers simply cannot afford to abandon messages (see e.g. Björkman, 2014). However, while this may explain the frequent use of self-reliant strategies, and the relative absence of uncertainty strategies, it does not explain why speakers do not ask for help, since asking questions engages interlocutors in a process of co-construction of meaning, which can be very effective.

It might be the case that Spanish speakers prefer self-reliant strategies since the Dutch speakers in the NCSE were no native speakers of English either. Even though some of the Spanish speakers acknowledged that their Dutch interlocutor's proficiency level was higher than their own, they may have been reluctant to ask help from another non-native speaker of English, since they might not perceive them as being able to help them (quickly) overcome their linguistic difficulties.

In order to answer our second research question, we compared CS use in informal, peer to peer conversations with CS use in formal interviews. There was no difference in overall CS use between the two situations. However, we found an interaction between utterance length and formality. Since speakers tend to produce longer utterances in formal than in informal speech, the interaction shows that when long utterances do occur in informal speech, speakers are more likely to have linguistic difficulties, which they try to solve with a CS and which they possibly also mark with hesitation markers (e.g. *eh*) or with filler words, for which we also found an interaction between utterance length and formality.

Seven of the nine most frequent CSs revealed an effect of formality. Two cognitively relatively effortless strategies were used more often in the informal than in the formal speech situation: code-switches and repetition for emphasis purposes. When speakers use these strategies they position themselves towards the least effort end of the continuum, which may be detrimental to their interlocutor's understanding of the message: relatively effortless strategies are possibly not very effective to communicate the intended message. This is particularly true for code-switches in situations where interlocutors do not know the other speakers' L1(s), as is often the case in ELF communication. In informal speech situations the need to be exact and fully understood may be less stringent, for example when speakers are engaged in small talk, or it may be considered acceptable when the interlocutor needs to ask for clarification of a CS, given the more interactive nature of the communication.

Other strategies were used more often in formal than in informal speech. These include reformulations, foreignizing and the use of all purpose words. For approximations, we found no fixed effect of formality, but the individual speakers' slopes for formality suggest a trend towards a similar effect of formality: most speakers used more approximations in formal than in informal speech. All-purpose words and approximations are L2 alternatives for target lexical items, and therefore can both be considered more informative than code-switches, such that speakers who use them move away from the least effort end, towards the cooperative end of the continuum. This applies to an even larger extent to foreignizing and reformulation. Consequently, in line with Poulisse's (1993) results, we found that in formal speech situations, in which information exchange is more important, speakers use more informative CSs.

In conclusion, our findings strongly suggest that L2 speakers take into account the situational context and decide which CSs to use based on the least effort and cooperative principles (Poulisse, 1993). As expected, the speakers used relatively effortless strategies more frequently in informal than in formal speech, while the inverse was true for relatively effortful strategies. These findings support the second division in our taxonomy of strategies, which places strategies along a continuum which opposes the two principles, with cognitively relatively undemanding (least effort) strategies on one end, and strategies that are cognitively more demanding, but also more informative (cooperative), on the other end. Our results show that the task effects that have consistently been found within SLA studies (see e.g. Poulisse, 1993; Poulisse & Schils, 1989) are in fact proxies for situational variation in settings other than the classroom.

To provide answers to our third research question, we investigated whether individual speakers differed in the extent to which their CS use was influenced by the formality of the situation. We found that the effect of formality varied significantly among individual

speakers for six of the seven strategies for which we found formality effects. The only strategy that showed no individual variation in the effect of formality was reformulation. Inversely, while there was no simple fixed effect of formality on the use of filler words and approximations for the group of speakers as a whole, the individual speakers' slopes did reveal variation among speakers in the effect of formality. The individual slopes for approximations revealed a rather consistent pattern showing that they were used more often during the formal interview by almost all speakers.

The speaker dependent slopes for fillers revealed a somewhat more diffuse picture: about half of the speakers used more fillers in informal speech, whereas the other half used more fillers in formal speech. This may be explained by a difference in the function that filler words may have for different speakers (see e.g. Aijmer, 2004; Götz, 2013; Hasselgren, 2002) or by speakers' individual speaking styles, which they possibly also show in their L1 (see e.g. Olynyk, d'Anglejan & Sankoff, 1987). For instance, the functions of the filler word *like* are manifold (e.g. Tagliamonte, 2011) and subtle functional differences in the occurrences of *like* in our data are conceivable: for some speakers, *like* may have mainly served pure time-gaining purposes, as in (5), whereas other speakers not only gained time and kept the communication channel open, but also enhanced the informal character of their speech, as in (6).

(5) "but then if you want to study everything related to I do not know how to say to *like* eh words *like*"

M4_I_502-505

(6) "so eh *like* there is always *like* half an hour that it the club is empty but then it hm gets *like* really full *like* really fast"

F10_I_148-150

Furthermore, there may be gender differences in the functions of fillers, as revealed by the interaction between gender and utterance length: long utterances produced by female speakers tend to have more filler words than utterance produced by male speakers. A future, qualitative analysis of the use of fillers in the NCSE, may unveil patterns in the use of fillers that our quantitative approach did not uncover.

Future research may also focus on the non-verbal aspects of CSs. Gullberg (1998) claims that gestural CSs are usually combined with verbal CSs as a way to enhance communicative effectiveness, but that gestures may also be used as stand-alone CSs. If speakers are driven by the need to communicate their intended message, they may gesture more in formal speech than in informal speech, since gestures can provide their interlocutor with additional information. Yet, speakers may gesture less, if they consider such behavior to be inappropriate in a formal compared to an informal speech situation. Analyses of non-verbal CSs may be carried out based on the data in the NCSE, which includes video recordings of all speech situations.

Future studies may also investigate the effect of the speaker's language proficiency on CS use. Poulisse (1993) notes that proficiency effects are just as persistent as task effects, or even more so, and that low proficiency speakers use more strategies in general and more L1 based strategies than high proficiency speakers (but see Poulisse & Schils, 1989, where task effects were found to be more dominant than proficiency effects). From an ELF perspective, Björkman (2011) claims that speakers with varying proficiency levels are capable of using CSs. In the present study we did not include proficiency, since the proficiency levels of the Spanish speakers in the NCSE are divided rather unequally over a limited number of CEFR proficiency scores (see Chapter 2). All speakers used CSs, but further investigations are necessary to grasp how proficiency influences CS use and whether there is an interaction between proficiency and situational variation.

In conclusion, our study suggests that general principles of communication govern ELF speakers' use of CSs in real-life speech situations. First, speakers prefer CSs that comply most with an image as a competent language user: they use self-reliant strategies more frequently than interdependent or uncertainty strategies. Secondly, the least effort and cooperative principles have an impact on which strategies speakers deem appropriate in a given situational context: they tend to prefer cooperative but cognitively more demanding CSs in formal speech situations, and less effortful, but possibly also less cooperative CSs in informal speech situations. Thirdly, we have shown that individual variation exists in the use of CSs. All in all, the Spanish speakers of English in the present study tried to prevent or overcome linguistic difficulties themselves, instead of asking help from their interlocutors, and they varied their CSs according to the situational context.

Appendix 3.1

*Definitions and examples taken from the NCSE of all 19 communication strategies in this study. The three communication strategies marked with * were induced from the NCSE during the development phase, the remaining 16 are based on Dörnyei and Scott (1997).*

Communication Strategy	Definition	Example
	Self-reliant strategies	
All-purpose words	Extending a general, "empty" lexical item to contexts where specific words are lacking	it is also really difficult to to make new companies in Spain [...] that could be a good point if they if they helped eh to make faster **the things** to (*M14_F_123-126*)
Approximation	Using a single alternative lexical item, such as a superordinate or a related term, which shares semantic features with the target word or structure	it was a a **voice** eh the **voice** eh the **voice** for a b\- a band (*F8_I_553-556*)
Circumlocution	Illustrating or describing (using more than one word) the properties of the target object or action	so we were to a [...] **a place like a shop when you go and you can use [breath] eh the computers and the internet** (*F3_I_457-466*)
Code-switching	Including L1 words in L2 speech; either single words or whole clauses	it is a **costumbre** (*F16_I_455*)
Exemplification*	Expressing an abstract message in a concrete way with an example or an instance of the abstract message	well if you jump [...] always there is a a security man **and it is "*you eh come here*"** and you have to pay more (*M9_I_356-361*)

Communication Strategy	**Definition**	**Example**
Fillers	Using gambits (actual words, not 'eh' or 'hm' etc.) to fill pauses / to stall / to gain time	I saw **like** a tv show (*M3_I_135-136*)
Foreignizing	Creating an L2 word from an L1 word by applying (supposed) L2 phonology/morphology to it	they have the hm absolute **majory** (*M15_F_452*)
Reformulation	Repeating/rephrasing (parts of) the message until reaching a satisfactory result	ah Madonna yes **he is** very **she is** very strange (*M7_I_986-988)*
Repetition for emphasis purposes*	Repeating a lexical item in order to add emphasis / intensity	no eh this university is close [...] but the others university it is **far far far** (*F4_I_409*)
	Interdependent strategies	
Comprehension check	Asking questions to check that the interlocutor can follow you	is a a beer a little beer **ok?** (*F8_I_174*)
Direct appeal for help	Turning to the interlocutor for assistance by asking an explicit question concerning a gap in one's L2 knowledge	tv series or **how do you say eh English?** (*M13_I_918-920*)
Indirect appeal for help	Trying to elicit help from the interlocutor indirectly, for instance with a rising intonation	no because eh the the players hm **players?** (*F16_I_301-302)*

Communication Strategy	**Definition**	**Example**
Request for clarification	Requesting the interlocutor to explain an unclear / unfamiliar utterance	eh **come up? I do not** (*M6_I_664*)
Request for confirmation	Requesting confirmation that one heard or understood something correctly	**I think that you are telling me if I would eh study the same?** (*F3_F_664-666*)
Request for repetition	Requesting repetition when not hearing or understanding something properly	**eh sorry?** *(F1_F_232*)
	Uncertainty strategies	
Expressing non-understanding	Expressing that one did not understand something properly	eh **I do not understand you** (*M7_I_659*)
Indicating linguistic difficulty	Using verbal marking phrases before or after a strategy to signal that the word or structure does not carry the intended meaning perfectly in the L2 code	there have been some **I don't know how to say** (*M5_F_106-108*)
Message abandonment	Abandoning an intended plan without having reached a satisfactory alternative	the new government ha\- has done eh a lot of eh laws new laws in in different fields eh in they are **[abandons message]** well now the eh there is there is a few time ago (*M2_F_216-229*)
Signaling overall insecurity*	Apologizing (in general) for inadequate proficiency in English	**I do not speak English for so many times so I am not** (*F7_I_521*)

4 Four

Cuatro

Vier

"I can't understand"

The production and comprehension of can *and* can't *by native and non-native speakers of English*

This chapter is based on:

Kouwenhoven, H., Ernestus, M. & Van Mulken, M. (submitted). "I can't understand": the production and perception of *can* and *can't* by native and non-native speakers of English.

Abstract

The difference between an affirmative and a negative English statement sometimes seems to be realized by only one sound, as in *I can/can't go*. This chapter investigates /t/-reduction in American and Spanish English *can't*, both from a production and a comprehension point of view. Our corpus study shows that /t/ is frequently absent from *can't*, more often in Spanish English (40%) than in American English (33%), and more often in informal (47%) than in formal (34%) Spanish English. Phone durations in Spanish English reduced *can't* tokens (without /t/) are similar to those in *can*, whereas phone durations in American English reduced *can't* tokens are similar to those in unreduced *can't* tokens. A comprehension experiment with four listener groups (native English, Spanish, Dutch and Mandarin-Chinese) showed that all listeners had difficulties comprehending Spanish English reduced *can't*. American English reduced *can't* tokens were less ambiguous to native English and Dutch listeners, but not to Spanish and Mandarin-Chinese listeners. We argue that the durational cues in American English help, but those in Spanish English impede the perception of reduced *can't*. Together, the two parts form a first step towards understanding the production and comprehension of *can't* in natives' and non-natives' speech and ears.

Introduction

In their book on forensic phonetics, Baldwin and French (1990) describe the case of a doctor of Greek origin who worked in an English speaking country and who had to appear in front of a disciplinary tribunal. The doctor, who spoke English with a strong Greek accent, was accused of acting irresponsibly. He had been recorded in his doctor's office when he handed a patient prescription drugs in tablet form while pronouncing the phrase "you *can/can't* inject those things". There was ambiguity about the final /t/[1] in *can't* in the speech signal. The prosecution argued that the doctor had said *can*, thereby irresponsibly recommending his patient to grind up the tablets and inject them. The defense maintained that the doctor warned the patient against injecting the drugs by saying *can't*, hence acting responsibly. A trained phonetician performed phonetic analyses of multiple tokens of *can't* produced by the same doctor, which showed that he regularly elided the final /t/ in *can't* and that he used a front vowel in both *can* and *can't*. Only after more fine-grained spectral analyses of the vowel in several tokens of both *can* and *can't*, it was concluded that the doctor probably had said "can't", which freed him of the charges against him.

The Greek doctor's case shows that if *can't* is pronounced without /t/, it may sound very similar to *can*. To our knowledge, no studies have been carried out to investigate the difference between *can* and *can't*, or similar affirmative/negative minimal word pairs, in speech. This chapter aims at beginning to fill this gap and consists of two main parts. In the first part, we will present a corpus study to find out whether the Greek doctor is a rare example of a speaker who pronounces *can't* without /t/, or whether /t/ is more commonly absent from *can't*. We will focus on both native and non-native speakers of English. In the

[1] In this chapter, we use the / / - notation in order to indicate that we do not represent all phonetic variation that may be present in the speech signal. Our use of the / / - notation does not imply that we believe that these sound sequences are stored as such in the mental lexicon.

second part of this chapter, we will investigate the comprehension of *can* and *can't* by both native and non-native listeners of English. The two parts combined will shed light on the pervasiveness of the potential ambiguity that may exist between affirmative and negative statements in both natives' and non-natives' speech and ears.

Reduction in speech, such as the absence of /t/, is very common. For instance, Johnson (2004) analyzed part of the Buckeye Speech Corpus (Pitt et al., 2007), which contains conversational American English speech, and found that over 20% of the words lacked at least one segment. Johnson investigated words of different lengths, ranging from one to eleven phones in their citation forms. He found that 22% percent of all tokens of content words that have four phones in their citation forms, such as *can't*, lacked at least one segment. Furthermore, reductions in these words usually involved plosives or resonants, rather than vowels.

Johnson's (2004) study was based on informal, conversational speech, which is particularly likely to contain reduced word tokens: although previous studies on the influence of the situational context on reductions in speech are scarce, they suggest that reductions are more frequent in informal contexts than in formal contexts. For instance, Warner and Tucker (2011) have shown that reduction of stops and flaps in American English is greater in conversational speech compared to list-reading, and that story-reading takes an intermediate position. Hanique, Ernestus and Schuppler (2013) found a similar stair-step pattern in the influence of situational context on schwa-reduction in Dutch past participle prefixes: schwa was most frequently absent in conversational speech (52%), followed by TV interviews (35%) and read speech (12%). Their investigation of the absence of /t/ yielded slightly different results: in both conversational speech and TV interviews, 29% of the word tokens that have /t/ in their citation forms lacked /t/, against 12% of the word tokens in read speech. Ernestus, Hanique and Verboom (2015) have shown that massive reduction (see also

Johnson, 2004) is more frequent in Dutch in casual, conversational speech than in spontaneous speech produced under formal conditions. In all, it is clear that very formal (read) speech is different from spontaneous speech, when it comes to reductions, but less is known about differences in reductions, including about /t/-reduction, between spontaneous speech produced under formal and informal conditions.

Several studies have focused specifically on /t/-reduction. An early sociolinguistic example is Labov's (1972) work on consonant cluster simplification through the reduction of word-final /t/ in what he calls 'Black English Vernacular'. He found that /t/ is variably absent from word-final consonant clusters: /t/ is absent less frequently when it is an inflectional morpheme (e.g. indicating the past tense) than when it is non-morphemic, and the absence of /t/ is less common when it is followed by a vowel than when it is followed by a consonant. Guy (1991) comes to similar conclusions based on his exponential model of /t/-reduction and on speech data from sociolinguistic interviews with seven North American speakers of English. More recently, Pitt (2009) showed that in American English informal speech, /t/ is absent from word-medial /nt/ clusters in 75% of bisyllabic word tokens that have primary stress on the first syllable. Absence of /t/ is thus a common feature of native (American) English.

Previous studies suggest that reductions may also occur in non-native English speech. In fact, some studies have found that non-native speakers of English show reduction patterns that are comparable to those of native speakers. For instance, Baker et al. (2011) show that reductions in both native (American) and non-native (Korean and Chinese) English speech are governed by lexical predictability (i.e. reduction due to previous occurrence of a word within a specific discourse) and word frequency (i.e. the frequency of occurrence in the language as a whole, based on counts in the British National Corpus). Schertz and Ernestus (2014) provide similar evidence for non-native (Norwegian and Czech) English. While both

studies did not focus specifically on /t/-reduction, they did investigate reduction phenomena that can be caused by the less careful execution of articulatory gestures, like /t/-reduction. Therefore the Baker et al.'s (2011) and Schertz and Ernestus' (2014) findings suggest that the pronunciation of *can't* without /t/ may also occur in non-native speech.

It is especially likely for /t/ to be absent from non-native word tokens if the reduced pronunciation variant better matches the phonotactic constraints of the speakers' native languages (L1). For instance, Coe (2001), in a discussion of frequent difficulties of Spanish learners of English aimed at teachers of English as a foreign language, suggests that since consonant clusters are much less frequent in Spanish than in English, Spanish learners of English have difficulties producing and perceiving consonant clusters and tend to simplify them. One typical example of such a simplification, according to Coe, would be the production of *can* for *can't*. Whether this simplification actually occurs in conversational speech, and if so how often, has never been investigated, however.

We will investigate whether /t/ is absent more often from non-native (L2) Spanish English than from native English *can't* in spontaneous speech. Furthermore, we will study whether Spanish speakers of English are influenced by the situational context, like native speakers are. If the absence of /t/ in Spanish speakers' realizations of *can't* is primarily governed by pronunciation difficulties, /t/ may be absent equally often in formal and informal speech. Nevertheless, the combined results of Baker et al. (2011), who investigated read speech, and Schertz and Ernestus (2014), who studied conversational speech, suggest that non-native speakers behave like native speakers in both careful and casual speech, which means that Spanish L2 users of English may reduce less often in formal than in informal speech.

What makes the investigation of Spanish L2 English realizations of *can't* without /t/ particularly interesting is that the /t/ in *can't* may be the most prominent and possibly the only

cue that the speaker intended *can't* and not *can*. First, Spanish has far fewer vowels than English: for instance, the English vowels /æ/, /ɑ:/ and /ʌ/ all correspond to the Spanish vowel /a/ (e.g. Coe, 2001). Spanish speakers may therefore produce similar sounding vowels in *can* and *can't*. Secondly, vowel length is not distinctive in Spanish (e.g. Coe, 2001), so in Spanish English speech, variation in vowel duration probably also provides no evidence as to whether *can* or *can't* was pronounced. Thirdly, Spanish knows no vowel reduction in unaccented syllables (see e.g. Coe, 2001), contrary to English (e.g. Flemming & Johnson, 2007). Both Spanish English *can* and *can't* are therefore likely to be produced with a full vowel regardless of the accentuation in the sentence. In native (American) English speech[2], the vowel in unaccented *can* may be reduced in duration and in quality (to schwa), or may even be completely absent. In contrast, *can't* tends to receive accent, because it often has contrastive focus, and it then maintains its full vowel. Even when *can't* is not pronounced with contrastive focus, it usually keeps more of its citation vowel quality than *can*. All in all, the quality and duration of the vowel in *can* and *can't* may provide cues as to which word was intended in American English, while this may not be the case in Spanish English.

As a consequence, if /t/ is indeed commonly absent from *can't* in both American and Spanish English, the question arises what consequences the absence of /t/ may have for the comprehension of *can't*. Native listeners generally do quite well in recognizing reduced word tokens, especially in context (for an overview, see Ernestus & Warner, 2011). Native listeners of English generally cope well with reduced realizations of /t/, for example. In their experiment 1a, Sumner and Samuel (2005) showed that three pronunciation variants of word-final /t/ (i.e. a fully articulated canonical /t/; a coarticulated, glottalized stop; and a glottal stop) equally effectively activate semantically related words. Pitt (2009) investigated the

[2] The information in this paragraph on English *can* and *can't* comes from a personal communication by Natasha Warner, University of Arizona.

perception of word-medial /nt/-clusters when /t/ was completely absent (i.e. when the /nt/-cluster was realized as a nasal flap) and when a canonical /t/ was produced in the /nt/-cluster. He compared two groups of bisyllabic words with primary stress on the first syllable and either a reduced or an unreduced vowel in the second syllable (e.g. *counter* and *context*, respectively). In line with Sumner and Samuel's results, Pitt found that native listeners recognize reduced consonant clusters (without /t/) very well, but only in the words with a reduced vowel in the second syllable, in which /t/ is frequently absent in American English.

Frequency is one type of knowledge that L1 listeners rely on to cope with /t/-reduction, which they combine with other types of information. For instance, Mitterer and Ernestus (2006) showed that Dutch L1 listeners combine acoustic cues with information about how frequent word-final /t/ is absent in a given context: listeners reconstructed /t/ more often after /s/ than after /n/, and more often after a short preceding /s/ than after a long preceding /s/. These findings are argued to reflect a compensation for the higher likelihood of /t/-reduction following /s/ than /n/ and following short /s/ compared to long /s/.

The question is whether non-natives can also make use of these types of information. Very little is known about non-native comprehension of reduced speech, but some studies suggest that when L2 listeners cannot rely on knowledge about frequencies of occurrence from their L1, difficulties in comprehension arise. For instance, Mitterer and Tuinman (2012) investigated the perception of word-final /t/-reduction in Dutch by Dutch L1 and German L2 listeners. They found that the German L2 listeners behaved quite comparably to the Dutch L1 listeners when /t/ was part of the stem of a content word, for which reduction patterns in Dutch and in German are similar. However, when /t/ was a marker of verbal inflection, which is more often reduced in Dutch than in German, the German L2 listeners behaved differently than the Dutch L1 listeners. More specific to the word-final /nt/ cluster in *can't*, Mitterer, Yoneyama and Ernestus (2008) found that word-final /t/ in Dutch is more difficult to notice

after /s/ than after /n/ for Japanese L2 listeners, who are not familiar with word-final /t/-reduction in general.

Non-native listeners may also be impeded by the influence of their L1's acoustics. For instance, differences in vowel quality and duration may be less well perceived by non-native listeners: Weber, Di Betta and McQueen (2014) found that Italian L2 listeners of English made no distinction between short and long vowels in words such as 'trick' and 'treat', since this vowel length distinction does not exist in their L1. The same is true for Spanish L2 listeners of English, who generally have difficulties with the recognition of English vowels (e.g. Coe, 2001).

In all, if subtle differences in vowel length and quality are the main cues to determine whether the speaker intended *can* or *can't*, as may be the case in a reduced token of *can't* without /t/, Spanish L2 listeners of native English speech may be hampered twofold when they try to disambiguate between the two. First, they may be unable to perceive the fine acoustic detail that could provide information as to whether *can* or *can't* was intended, and secondly, they may lack the knowledge on frequent reduction patterns in order to correctly infer the presence of /t/ where needed.

Interestingly, the situation may be different when Spanish L2 listeners listen to Spanish English speech. Some studies have shown that L2 listeners find L2 speech that is produced by talkers with whom they share their L1 is equally or more intelligible than native English speech (for an overview, see Bent & Bradlow, 2003). Bent and Bradlow (2003) also provide evidence for a "mismatched interlanguage speech intelligibility benefit": high-proficient non-native talkers of English were rated equally or more intelligible than native English talkers by non-native listeners with various L1 backgrounds. However, based on a follow-up study, Stibbard and Lee (2006) challenge the existence of a mismatched interlanguage speech intelligibility benefit, either for high-proficient or low-proficient L2

speakers. Moreover, they claim that, while Bent and Bradlow (2003) speak of a benefit when speech is judged more or equally comprehensible, for an actual benefit to exist, one speaker's speech should be judged more comprehensible than another speaker's speech. Munro, Derwing and Morton (2006) showed that native speakers of Mandarin-Chinese found Spanish L2 English less intelligible (as reflected by the percentage of correctly transcribed words in a dictation task with short narratives) and less comprehensible (as shown by comprehensibility ratings on a 9-point semantic differential scale) than Japanese and Cantonese L2 English. This suggests a partial or regional interlanguage intelligibility benefit, a possibility that is also acknowledged by Bent and Bradlow (2003).

Importantly, none of these studies examined participants' performance in an online listening experiment; instead, they only included rating scales and/or a transcription task without time pressure. Furthermore, the researchers used read speech (Bent & Bradlow, 2003; Stibbard & Lee, 2006) or stretches of speech taken from narrative monologues (Munro et al., 2006), which are different from conversational speech. Both the absence of time pressure and of casually produced word tokens limit the generalizability of the findings to real-life speech situations.

The objective of the online, auditory comprehension experiment described in Section 3 of this chapter, which includes stimuli spliced from spontaneous speech, is twofold. First, it aims at providing a between-group comparison of four (native and non-native) listener groups' comprehension accuracies in order to investigate how well listeners cope with the absence of /t/ from *can't* in spontaneous American L1 English and Spanish L2 English. Secondly, it aims at establishing within each listener group whether American L1 English or Spanish L2 English is more comprehensible, in order to provide additional insights to the discussion on the existence of interlanguage speech intelligibility benefits.

We will compare the comprehension of *can't* in spontaneous American L1 English and Spanish L2 English speech by one native and three non-native listener groups. We include native listeners of English, since natives have been found to generally cope well with the absence of /t/ in native English (see e.g. Pitt, 2009; Sumner & Samuel, 2005), but may have difficulties with non-native speech (e.g. the case of the Greek doctor; see also Bent & Bradlow, 2003; Stibbard & Lee, 2006). We will compare the native listeners with three non-native listener groups: Spanish listeners of English, who share the L1 background of the L2 speakers; Dutch listeners of English, whose L1 belongs to the same language family as English, but not as Spanish; and Mandarin-Chinese listeners of English, whose L1 belongs to a different language family entirely. Interestingly, Mandarin-Chinese and Spanish listeners share some difficulties with English, notably with consonant clusters (see e.g. Bent, Bradlow & Smith, 2007; Chang, 2001), but also have been found to consider Spanish L2 English more difficult to understand than Japanese and Cantonese English (Munro et al., 2006). The question therefore remains how they cope with the absence of /t/ from *can't* in spontaneous American and Spanish English.

Production of *can* and *can't* – a corpus study

Materials

We studied tokens of *can* and *can't* from two corpora. American L1 English tokens were taken from the Buckeye Speech Corpus (Pitt et al., 2007). Spanish L2 English tokens were taken from the Nijmegen Corpus of Spanish English (NCSE; see Chapter 2). We will discuss the token collection for the two corpora separately below.

Nijmegen Corpus of Spanish English

The Nijmegen Corpus of Spanish English is a collection of spontaneous speech from 34 Spanish L2 speakers of English in interaction with a Dutch confederate speaker of English in

an informal, peer to peer conversation and with a second Dutch confederate speaker of English in a formal, but unscripted interview. The Spanish speakers were students; most were enrolled in engineering degree programs. During the informal, peer to peer conversations, the interlocutors spoke freely about any topic they liked, and they played a name guessing game. The average duration of the informal conversations is about 45 minutes. During the formal interview, the Spanish speakers were interviewed about Spanish current affairs. Both speakers wore formal clothing and a camera was overtly present. The average duration of the formal interviews is about 25 minutes. The speech in the NCSE has been split into short chunks of about two seconds on average based on natural pauses in the speech signal. These chunks have been orthographically transcribed, but no phonetic transcriptions of the NCSE were available.

We used the automatic speech recognition (ASR) system HTK (Hidden Markov Model Toolkit; Young et al., 2006) to generate broad phonetic transcriptions of the chunks containing *can* or *can't* following a forced alignment procedure similar to the one described by Schuppler, Ernestus, Scharenborg and Boves (2011). ASR systems have proven to produce transcriptions that are sufficiently comparable to human-made phonetic transcription and have the advantage of being far less time-consuming and, importantly, more consistent than human transcriptions (see e.g. Schuppler et al, 2011; Pluymaekers, Ernestus & Baayen, 2006).

Forced alignment uses phone models that are mapped onto the speech signal. Since the speech in the NCSE is heavily accented, phone models trained on native English speech were considered inaccurate for the phonetic transcriptions of our data. We therefore trained our own phone models on the NCSE. The input for the training phase consisted of the wave files of the chunks of speech containing all *can* and *can't* tokens, and a pronunciation lexicon holding the concatenated phones of the standard pronunciations (see also Vorstermans,

Martens & Van Coile, 1996) of every word in each chunk. We took the phone strings from Celex (Baayen, Piepenbrock & Gulikers, 1995) or created them by hand for words that were not in Celex. Some chunks contained Spanish words, for which we did not create standard pronunciations, because of the very different phones involved. We excluded these chunks from the procedure. Consequently, we trained our phone models on 919 chunks of speech, with a total duration of approximately 38 minutes.

We trained 49 32-Gaussian tri-state monophone models, including four models for non-speech sounds: laughter, breath-taking, clicks produced by the speakers' mouths and sounds resulting from microphone touches. We are aware that models cannot reliably be trained for laughter (Schuppler et al., 2011), and probably neither for the other non-speech sounds. We are confident, however, that with the models for the non-speech sounds, the ASR can more accurately place surrounding phone boundaries. The models were trained at a frame rate of 10 ms and a window length of 25 ms. For each frame, 13 MFCCs (the mel-scaled cepstral coefficients C0-C12) and their first and second order derivatives (39 features in total) were calculated.

The phone models were then used for forced alignment by the ASR. We created a pronunciation dictionary which included two pronunciation variants of *can*, with two different phones for the vowel (i.e. /æ/ as in *access* and /ɑ/ as in *father*), and four pronunciation variants of *can't*, with the same two vowel options and with or without /t/. The ASR determined for each token of *can* and *can't* which pronunciation variant was present in the speech signal. In the remainder of this chapter, we will focus only on the presence or absence of /t/, ignoring potential differences in vowel quality.

We validated the ASR by comparing its transcriptions of a subset of 79 *can* and 51 *can't* tokens with two human-made transcriptions. We compared the mean differences between the positions of the phone boundaries (in ms) and the percentages of differences

smaller than 20 ms, which is a widely used accuracy measure (see e.g. Pluymaekers et al., 2006; Vorstermans et al., 1996; Sjölander, 2001). The agreement between the two human transcribers was high (see Table 4.1). A first comparison of the ASR and the two human transcribers showed that the ASR consistently placed the boundaries for the start and the end of /n/ too early. We resolved this issue by shifting all /n/ boundaries 25 ms to the right (see also Pluymaekers et al., 2006). After this adjustment, the agreement between both human transcribers and the ASR was also high (see Table 4.1).

Table 4.1

Comparison of the automatic (A) and human-made (H1 and H2) phonetic transcriptions. The number of tokens (N) in each comparison is given in the left column [a].

	Mean difference between boundaries			Percentage of boundaries within 20 ms		
Boundary	A – H1	A – H2	H1 – H2	A – H1	A – H2	H1 – H2
Start /k/ (N = 130)	8.71 ms	8.81 ms	4.42 ms	90.77 %	88.46 %	97.70 %
Start /a/ (N = 130)	7.00 ms	9.97 ms	6.08 ms	95.38 %	85.38 %	95.38 %
Start /n/ (N = 130)	11.36 ms	13.29 ms	4.63 ms	85.15 %	82.30 %	96.15 %
End /n/ (N = 130)	18.18 ms	19.97 ms	10.23 ms	72.31 %	62.31 %	84.62 %
Start /t/[a] (N = 16-20)	11.29 ms	8.99 ms	6.99 ms	88.24 %	87.50 %	90.00 %
End /t/[a] (N = 16-20)	22.65 ms	14.21 ms	13.69 ms	70.59 %	93.75 %	75.00 %

[a] *In each pairwise comparison, the two transcribers could disagree about whether a token was* can *or* can't*. If the two transcribers did not agree (i.e. one transcribed a /t/, but the other did not), no comparison for /t/ boundaries could be made, which explains the variation in the Ns for start and end of /t/.*

Since the presence or absence of /t/ in *can't* is the main focus of the present study, we also examined the transcriptions of the 51 tokens of *can't* by both human transcribers and the ASR in this respect. The agreement on the presence or absence of /t/ was high: in 47 cases (92.2%) the ASR agreed with at least one human transcriber and only in four cases (7.8%) did the two human transcribers both differ from the ASR.

All in all, the automatic and the human transcriptions are comparable. Since the ASR allows for obtaining consistent phonetic transcriptions relatively quickly, we accept the validity of the automatic phonetic transcriptions for the present study.

Buckeye Speech Corpus

The Buckeye Corpus (Pitt et al., 2007) is a collection of informal speech from 40 American L1 speakers of English in free conversation with an interviewer. The entire Buckeye Corpus has been phonetically annotated in two steps: an ASR generated phonetic transcriptions, which were then hand corrected by human transcribers (see Pitt, Johnson, Hume, Kiesling & Raymond, 2005). These transcriptions show rather large variation in the phones in *can* and *can't*. With regard to the /t/ in *can't*, we considered /t/ present when it was transcribed as a canonical /t/; as a glottal stop; as a flap; or as a /d/ or /p/, which may arise due to co-articulation. We considered /t/ absent when the /nt/-cluster was realized as a nasal flap.

We identified 1164 tokens of *can* or *can't* in the Buckeye corpus. A word transcription file specified which phones were realized and provided timestamps for each token. For some tokens, some phones in the phonetic transcriptions fall outside the timestamps specified by the word transcriptions, which makes it impossible to automatically, reliably identify whether these phones are part of the tokens of *can* or *can't* or of the preceding or following words. Deciding on these cases manually would have been rather time-consuming and, more importantly, may have decreased the consistency of the phonetic transcriptions. These cases were therefore excluded. The remaining 926 occurrences of *can* and *can't* were extracted from the Buckeye Corpus.

Statistical analyses

Our final dataset included 1573 tokens of *can* (1094), reduced *can't* (i.e. without /t/; 170) and unreduced *can't* (with /t/; 309) that were not utterance final and that were not followed by laughter, breaths or some other noise, or by interventions from the interviewer in the case of the Buckeye tokens. Of these tokens, 823 were American English (97 reduced *can't*, 199 unreduced *can't* and 527 *can*), produced by 40 different speakers (20 male, 411 tokens; 20

female, 412 tokens). The remaining 750 tokens were Spanish English (73 reduced *can't*, 110 unreduced *can't* and 567 *can*), produced by 36 different speakers (17 male, 364 tokens; 17 female, 386 tokens).

Our analyses of the presence or absence of /t/ were based on the 479 tokens of *can't* only. The analyses were carried out by means of logistic linear mixed effects models with the binomial link function. In order to investigate whether /t/ was absent from *can't* more often in Spanish L2 English than in American L1 English, we tested for two fixed factors and the interaction between the two. *Corpus* was the predictor of interest, with the levels NCSE and Buckeye. *Next phone /t/*, with the levels /t/ or no /t/, was included to control for the higher probability of absence of /t/ due to degemination when *can't* was followed by /t/. We also tested two random factors as control variables: *speaker* was included to capture individual speaker variation, and *following word* was included since previous research has shown that reduction may be greater if the following word is more predictable (Bell, Brenier, Gregory, Girand & Jurafsky, 2008; Pluymaekers, Ernestus & Baayen, 2005). Furthermore, we tested for a random slope for *corpus* by *following word*.

We investigated whether /t/ was absent from *can't* more often in informal than in formal Spanish L2 English by also separately examining the subset of 183 tokens of *can't* from the NCSE. One hundred of these tokens occurred in formal speech, while 83 occurred in informal speech. We tested for two fixed factors and the interaction between the two: *formality*, which was the predictor of interest, with the levels formal and informal; and the control predictor *next phone /t/*. We also tested for a random effect of *speaker* and for a random slope for *formality* by *speaker*.

Our final models only include fixed factors and interactions that have *p*-values below .05 and random factors and slopes that significantly improve the model fit, as revealed by likelihood ratio tests.

In order to examine whether the Spanish English and American English reduced *can't* tokens sound like *can* or like *can't*, we also studied word token and phone durations. These analyses were based on the full dataset of 1573 tokens (i.e. including *can* tokens). We focused on word token durations and on the durations of /k/, /a/, and /n/, and investigated how these differed between the two corpora and between *can* and reduced and unreduced *can't* tokens. We created linear mixed effects models for each of the four durations separately. We included *corpus* (with the levels NCSE and Buckeye) and *word type* (with the levels *can*, reduced *can't*, and unreduced *can't*) as fixed predictors. We also tested for random effects of *speaker* and *following word*.

We applied Bonferroni correction, such that our models only include fixed factors and interactions that have *p*-values below .0125. Random factors and slopes are included if they significantly improve the model fit, as revealed by likelihood ratio tests. Once the fixed and random structures of a model were established, we removed outlying data points with standardized residuals exceeding 2.5 standard deviation units and refitted our final model.

Results

Effect of L1 on the absence of /t/

Table 4.2 shows our final statistical model for the influence of the speakers' L1 on the absence of /t/. The /t/ was absent from *can't* more often in Spanish L2 English, in 40% of the tokens, than in American L1 English, in 33% of the tokens. The random factors of speaker and following word, and the random slope for corpus by next word were also significant.

Table 4.2

Statistical model for the absence of /t/ in can't *as a function of the speakers' L1*

Fixed effects	*β*	*z*	*p*
Intercept	1.12	3.58	< .001
Corpus (NCSE)	-0.77	-2.01	< .05
Random effects	*SD*		
Following word (intercept)	1.28		
Following word by corpus (slope)	1.36		
Speaker (intercept)	0.59		

Effect of formality on the absence of /t/ in Spanish L2 English

Table 4.3 shows our final statistical model for the influence of formality on the absence of /t/ in Spanish L2 English. The /t/ was absent from *can't* more often in informal speech, in 47% of the tokens, than in formal speech, in 34% of the tokens. The absence of /t/ varied significantly between individual speakers, as is shown by the significant random effect of speaker.

The effect of formality holds in a model which controls for the effect of whether the following phone was /t/: when this was the case, /t/ was absent from *can't* more often than when *can't* was followed by another phone, possibly due to degemination.

Table 4.3

Statistical model for the absence of /t/ in can't *in the NCSE as a function of formality*

Fixed effects	*β*	*z*	*p*
Intercept	0.80	2.42	< .05
Formality (Informal)	-0.77	-1.99	< .05
Next phone is /t/	-2.65	-2.15	< .05
Random effect	*SD*		
Speaker (intercept)	1.04		

Word and phone durations in Spanish L2 English and American L1 English can and can't

Figure 4.1 shows the mean word token and phone durations of the 1573 tokens of *can* and *can't* in our dataset.

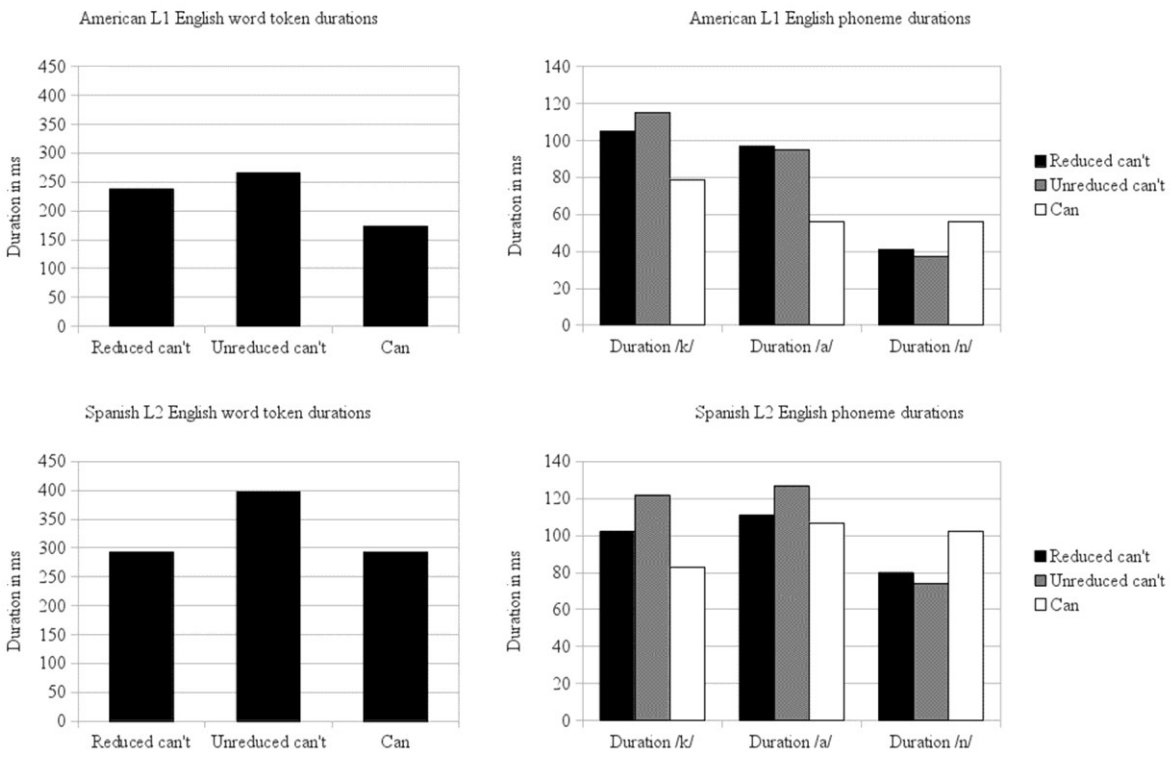

Figure 4.1

Mean durations (in ms) of can*, reduced* can't *and unreduced* can't*, and the mean durations (in ms) of the phones other than /t/ in the American L1 English tokens (top) and the Spanish L2 English tokens (bottom).*

We found an interaction between *word type* and *corpus* in the duration models for word token ($\chi^2(2) = 21.49$, $p < .001$) and for vowel duration ($\chi^2(2) = 30.75$, $p < .001$; these type II Wald chi-square tests were produced by the Anova function from the Car package for R, Fox & Weisberg, 2011, which we ran over the final linear mixed effects models). To investigate these interaction effects further, we split the data by corpus. No interaction effect was found for the durations of /k/ and /n/, so the effect of stimulus type on these durations is collapsed over corpus. Table 4.4 provides our results for word token and vowel durations.

Table 4.4

*The effect of word type (*can*, reduced* can't*, unreduced* can't*) on word token and vowel durations. The* β*'s represent milliseconds. The intercept represents reduced* can't *tokens.*

Duration	Word type	*β*	*t*	*p*
Word token (Buckeye)	*can*	-73.89	-12.36	< .001
	can't	24.82	3.81	< .001
Word token (NCSE)	*can*	-6.44	-0.47	.64
	can't	87.28	5.46	< .001
/k/	*can*	-20.57	-6.74	< .001
	can't	14.90	4.23	< .001
/a/ (Buckeye)	*can*	-47.89	-13.07	< .001
	can't	-2.55	-0.64	0.52
/a/ (NCSE)	*can*	2.06	0.38	.71
	can't	21.50	3.35	< .001
/n/	*can*	14.88	2.52	< .0125
	can't	-12.74	-1.80	0.07

The durations of the word tokens in American L1 English show a stair step pattern, with *can* being shortest and unreduced *can't* being longest, on average. The difference between reduced and unreduced *can't* is rather unsurprising, since in the former /t/ is absent, while in the latter it is not. Interestingly, the mean duration of /t/ (39 ms) almost exactly explains the difference in mean duration between American reduced *can't* (238 ms) and unreduced *can't* (266 ms).

In contrast, the mean durations of Spanish L2 English *can* and reduced *can't* tokens are exactly the same (both 293 ms), while unreduced *can't* is much longer (397 ms), on average. Interestingly, the mean duration of /t/ (75 ms) cannot explain the difference between reduced and unreduced *can't* as neatly as in American English.

The first phone in *can't* seems to provide no informative durational cues as to whether *can* or *can't* was intended in either American or Spanish English: the mean duration of /k/ in reduced *can't* (105 ms in American English; 102 ms in Spanish English) differs significantly from the durations of /k/ in both *can* (79 and 83 ms, respectively) and in unreduced *can't* (115 and 122 ms, respectively). In contrast, /n/ appears to provide durational cues that point

towards *can't* in both American and Spanish English: the mean duration of /n/ does not differ significantly in reduced and unreduced *can't* (41 and 37 ms in American English; 80 and 74 ms in Spanish English, respectively), while it is longer in *can* (56 ms in American English; 102 ms in Spanish English).

The vowel durations in American and Spanish English show different patterns. Whereas, on average, the vowels in American reduced and unreduced *can't* tokens are equally long (97 and 95 ms, respectively), and both are significantly longer than the vowels in *can* (56 ms), the mean duration of the Spanish English vowels in reduced *can't* pairs with that of the vowels in *can* (111 and 107 ms, respectively), and both are significantly shorter than the vowel in unreduced *can't* (127 ms).

Discussion and conclusions

Our analyses revealed that /t/ is absent from *can't* in both American L1 and Spanish L2 English: 33% of the American English and 40% of the Spanish English tokens of *can't* lacked a /t/. This provides additional evidence for the pervasiveness of reduction in speech in general (see e.g. Ernestus & Warner, 2011; Johnson, 2004) and of /t/-reduction in particular (see e.g. Pitt, 2009; Sumner & Samuel, 2005).

We have also shown that /t/ is absent from *can't* more often in Spanish L2 English than in American L1 English. This may be due to differences in the underlying processes that lead to reductions. The American speakers may reduce the /t/ in *can't* mostly because they articulate less carefully in informal, casual speech and therefore simplify their articulatory movements. In contrast, the Spanish speakers of English may also reduce /t/ in *can't* because of the difficulties they have producing consonant clusters due to their L1 phonotactics, as suggested by Coe (2001), which influences their articulation.

Next, we have found an effect of formality on the absence of /t/ from Spanish English *can't*: /t/ is more frequently absent from *can't* in informal than in formal speech. This within speaker analysis of situational variation provides additional evidence that non-native speakers show reduction patterns that are similar to those of native speakers (see Baker et al., 2011; Schertz & Ernestus, 2014): generally speaking, both native and non-native speakers reduce more in informal than in formal speech.

Then, we have shown that the word and phone durations of American and Spanish English *can* and *can't* differ in some important respects. American reduced and unreduced tokens of *can't* carry similar durational information: the durations of all phones in reduced *can't*, except /k/, are close to those in unreduced *can't*. Notably the combination of a relatively long /a/ with a relatively short /n/ are shared by both reduced and unreduced *can't* in American English. So when /t/ is absent, the durations of the remaining phones seem to provide cues that *can't* was intended.

The Spanish English reduced *can't* tokens convey more ambiguous durational cues. First, the total mean duration of the reduced *can't* tokens is equal to that of *can* tokens, just as the mean duration of the vowels in *can* and reduced *can't*. Combined, these two cues thus indicate that reduced *can't* is a token of *can*, instead of *can't*. In contrast, the mean duration of /n/ is the same in reduced and unreduced *can't* tokens and shorter than in *can* tokens, hence suggesting that reduced *can't* is a token of *can't*. The mean duration of /k/ in reduced *can't* tokens is ambiguous in itself, since it is exactly in between the mean length of /k/ in *can* and in unreduced *can't*, thus providing no definitive cues.

In short, we have shown that the Greek doctor is not the only speaker who drops the /t/ in *can't*, but that many more speakers do so regularly. The case of reduced *can't* is particularly interesting since, rather than resulting in a non-word, the reduction of *can't* results in something similar to *can*, which is the exact opposite of the intended meaning. This

seems to be particularly true for Spanish L2 English. Therefore, the question arises whether reduced tokens of *can't* are correctly perceived as *can't* or erroneously as *can*.

Comprehension of *can* and *can't* – an experimental study

Method

Participants

A total of 127 participants took part in our experiment, divided over four listener groups. Thirty-six Canadian native speakers of English[3] (24 female, mean age 19.78 years, *SD* = 1.80) and 21 native speakers of Mandarin-Chinese (14 female, mean age 20.05 years, *SD* = 1.94) from the participants pool of the Department of Linguistics, University of Alberta received course credit for their participation. Forty native speakers of Spanish (18 female, mean age 21.93 years, *SD* = 2.27) were recruited at the *Escuela Técnica Superior de Ingenieros de Telecomunicación* of the *Universidad Politécnica de Madrid*. Thirty native speakers of Dutch (20 female, mean age 20.50 years, *SD* = 1.65) were recruited from the participants pool of the Max Planck Institute for Psycholinguistics in Nijmegen, the Netherlands. The Spanish and Dutch participants received a small financial reward for their participation.

We assessed all participants' proficiencies with the LexTALE task (Lemhöfer & Broersma, 2012). Although this is a visual lexical decision task focusing on vocabulary knowledge, it has been shown to correlate substantially with a general proficiency measure (Lemhöfer & Broersma, 2012), and therefore provides some insight in the participants'

[3] We acknowledge that our Canadian listeners are not from the same dialect group as the speakers in the Buckeye corpus (Canadian and North Midlands dialect groups, respectively; Labov, Ash & Boberg 2005). To our knowledge, however, there are no interfering acoustic categories which would alter the Canadian listeners' ability to perceive the *can-can't* contrast in our stimuli.

proficiency levels. A linear regression model revealed that the LexTALE scores differed between all listener groups, with the native speakers of English having the highest and the Mandarin-Chinese speakers of English the lowest LexTALE scores (see Table 4.5).

The statistical analyses that we present in our results section are based on all participants. In order to investigate whether differences between the Dutch and Spanish listeners were only caused by differences in proficiency or by their L1 background as well, we also ran all models on a subset of the participants. This subset included the 23 Spanish listeners with the highest LexTALE scores and the 20 Dutch listeners with the lowest LexTALE scores, together with a random selection of 20 native English listeners and all 21 Mandarin-Chinese listeners. The mean LexTALE score of the Spanish listeners was significantly higher than that of the Dutch listeners in the subset (see Table 4.5). Importantly, the statistical analyses on the full dataset and on this subset yield similar results, which means that the effects reported below also hold for Spanish and Dutch listeners with similar LexTALE scores.

Table 4.5

Results of two linear regression models predicting LexTALE scores on the basis of listener group. We created a model for our full dataset and a model for a subset in which the LexTALE scores of the Spanish and Dutch listener groups were closer to each other.

	Full dataset			Subset		
Predictor	*β*	*t*	*p*	*β*	*t*	*p*
Intercept[a] (Dutch listeners)	75.83	835.12	< .001	71.25	606.13	< .001
Listener group (Spanish)	-8.05	-67.03	< .001	1.14	7.10	< .001
Listener group (Mandarin-Chinese)	-19.29	-136.28	< .001	-14.70	-89.51	< .001
Listener group (Native English)	14.65	119.17	< .001	17.13	103.01	< .001

[a] *The intercept represents Dutch listeners. This allows us to check for differences between the Dutch and the Spanish listeners, as well as between the Dutch and the native English listeners. If both these differences are significant, for the full dataset we may safely assume that the Spanish listeners' mean LexTALE score also differed from the native English listeners' mean LexTALE score.*

Materials

The stimuli in the perception experiment all contained tokens of *can* or *can't* from the corpus study. We presented these tokens in their immediate context taken from the corpora: one preceding and one following word (e.g. *I can't remember*, *you can go*). There were three criteria for the inclusion of a token. First, the preceding word should be a personal pronoun. Secondly, the following word should occur at least once in the experiment in combination with a full and once with a reduced token of *can't*. Thirdly, each following word in the experiment should be pronounced by an American and a Spanish speaker at least once.

Three types of stimuli were included (see Table 4.6). All 93 word trigrams with reduced *can't* (i.e. that were phonetically transcribed without /t/, while the orthographic transcriptions stated they were *can't*) that met the criteria were included (43 American English, 50 Spanish English), just as all 147 unreduced *can't* (with /t/) trigrams that met the criteria (99 American English, 48 Spanish English). We also included 218 *can* trigrams (123 American English, 95 Spanish English). Some following words occurred infrequently (i.e. between 1 and 15 times) in a trigram with *can* that matched the criteria; these were all included. A random selection of trigrams containing more frequent following words (i.e. *be*, 20; *do*, 53; *get*, 34; *go*, 34; *say*, 36; *see*, 34) was included. There were six different preceding words, which occurred between four and 185 times, and 29 different following words, which occurred between three and 53 times. The 193 Spanish L2 English stimuli were produced by 29 different speakers, and the 265 American L1 English stimuli by 35 different speakers.

Table 4.6

Number of stimuli per stimulus type and per speaker L1 background.

Stimulus type	American L1 English	Spanish L2 English	Total
Can	123	95	218
Unreduced *can't* (with /t/)	99	48	147
Reduced *can't* (without /t/)	43	50	93
Total	265	193	458

We verified in a pretest whether the reduced *can't* tokens had been correctly orthographically transcribed as *can't*. Eight native speakers of English were presented with the orthographic transcriptions of the context (i.e. 25 preceding and 25 following words for Buckeye tokens; eight preceding and eight following chunks for NCSE tokens) of all 93 reduced tokens of *can't* and of 50 randomly selected *can* stimuli in randomized order. The participants were asked to indicate whether they thought *can* or *can't* fit the given context best. We found that for 79 of the 93 reduced tokens of *can't* at least six participants agreed on *can't*, which we accepted as sufficient. For the remaining 14 cases, we created sound files of about 30 seconds long, from about 22 seconds before to about eight seconds after the token of *can't*. A ninth, phonetically trained, native listener of English evaluated these sound files and confirmed that *can't* had been uttered in each case.

We resampled the Buckeye stimuli from 16000 Hz to 44100 Hz so that they matched the sampling frequencies of the NCSE stimuli. Then, we normalized all stimuli in amplitude.

We pseudo-randomized the stimuli of each corpus six times, ensuring that no more than two stimuli of the same type followed each other. Each corpus list was divided into two blocks. We combined the corpus lists into 36 experiment lists containing each possible combination of corpus lists. We varied the order in which the four blocks were presented, such that in some lists the American and Spanish English blocks alternated, while in other lists the two American and the two Spanish English blocks followed each other.

Each experiment list was preceded by the same six familiarization trials in the same order for every participant. These familiarization trials were trigrams, containing clear tokens

of *can* or *can't* that were also in the corpus study. The trigrams that served as familiarization trials could not be used as stimuli because they did not meet all inclusion criteria.

Figure 4.2 shows the mean word and phone durations of the *can* and *can't* tokens in the stimuli. These are similar to the durations we found in the corpus study and, again, suggest that Spanish L2 English reduced tokens of *can't* are more ambiguous than the American L1 English reduced tokens of *can't*.

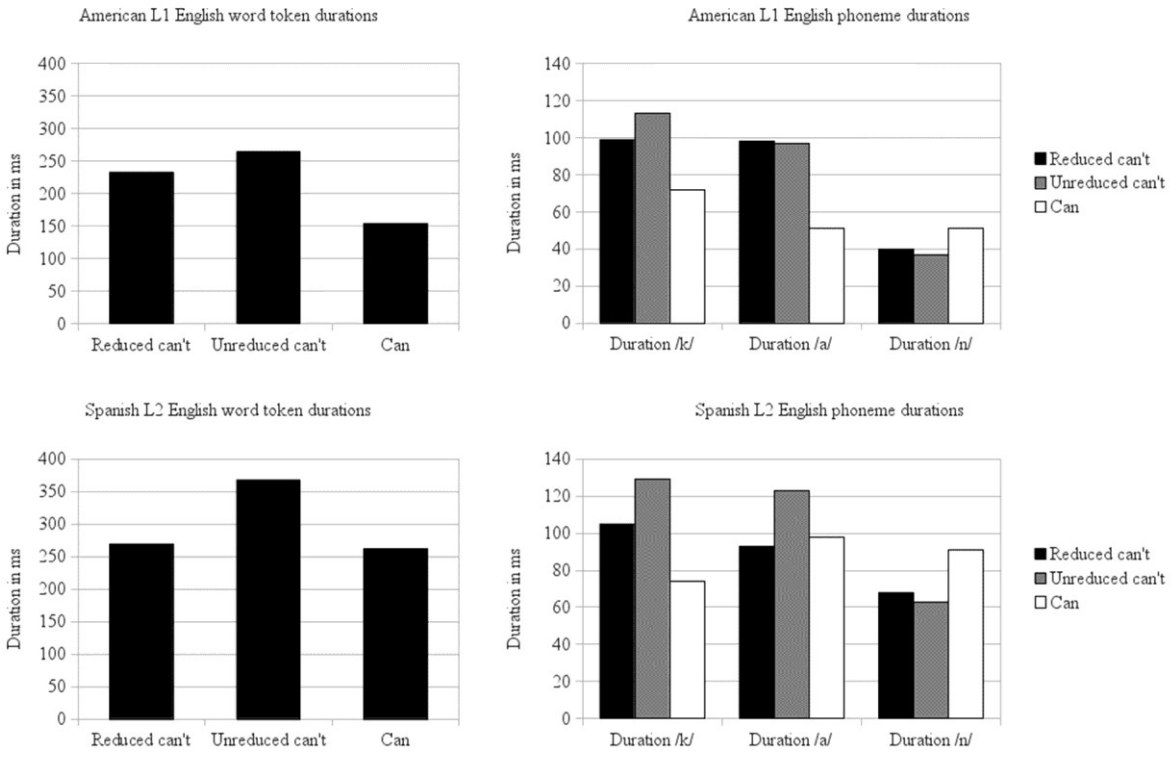

Figure 4.2

Mean durations (in ms) of can, *reduced* can't *and unreduced* can't, *and of their phones other than /t/, in the American L1 English stimuli (top) and the Spanish L2 English stimuli (bottom).*

We also presented each unique trigram once orthographically together with its positive or negative counterpart (e.g. *I can go* and *I can't go*) in a rating study that provided a relative frequency rating of each unique trigram from each participant. Ninety-eight unique trigrams were included in the experiment in one of seven randomized lists.

Procedure

Participants were tested in a sound-attenuated booth. The experiment consisted of three parts: an auditory comprehension part, a frequency rating part and a proficiency assessment part.

For the auditory comprehension part, participants received instructions on the screen, which read that they were going to hear short audio fragments, but not that they would hear native and non-native English. They were asked to indicate after each fragment whether the second word was *can* or *can't* and to do so as quickly and as accurately as possible. Participants gave their answers by means of button presses on a button box (*can*-responses with the dominant hand). They listened to the auditory stimuli through headphones. A trial contained one stimulus: participants saw a fixation cross during 400 ms on the middle of the screen, which was followed by a 200 ms pause before the stimulus was played. After the participant's button press, or 3650 ms after stimulus onset if the participant did not press a button, another 200 ms pause followed before the start of the next trial. Participants took a short break at the end of each block. The auditory comprehension part lasted about 20 minutes.

In the second part of the experiment, each participant estimated the relative frequency of occurrence in English of each trigram in the auditory comprehension part. Trigram pairs were orthographically presented on the screen on a seven point scale with the trigram with *can* (e.g. *I can remember*) on the left end and the trigram with *can't* (e.g. *I can't remember*) on the right end. The instructions were: "please indicate which of the two occurs more frequently in English". Participants used the 1-7 keys at the top of a keyboard, in order to indicate how frequently they thought that the positive trigram occurs in English relative to the negative trigram, and vice versa. If, for example, a participant typed a '7', the positive trigram (e.g. *I can remember*) received a score of '1' and the negative trigram (e.g. *I can't remember*) received a score of '7', which means that the participant estimated that *can* never,

but only *can't* occurs in the given context in English. There was no time limit and the next trial appeared on the screen upon the participant's button press. This part consisted of two blocks and participants took a short break between the two. The frequency rating task lasted about 20 minutes.

The third part of the experiment consisted of the LexTALE task (Lemhöfer & Broersma, 2012), a visual lexical decision task. It consists of three familiarization items, 40 real English words and 20 non-words that are orthographically legal and pronounceable in English. Participants gave their answers by means of button presses on a button box (*yes*-responses with the dominant hand). There was no time limit and the next trial appeared on the screen upon the participant's button press. The LexTALE task took approximately 5 minutes.

Statistical analyses

We compared listener groups' accuracies by means of logistic mixed effects models with the binomial link function. We tested for fixed effects of three predictors of interest and the interactions between the three: listener group, stimulus type and corpus. As a control variable, we also included the relative frequency rating of each trigram as indicated by the given participant. Furthermore, we tested for three random factors: participant, speaker of the stimulus and stimulus.

We tested for more fixed control predictors (e.g. proficiency, trial number, stimulus duration), but in the final models that we report below these are not included for the following reasons. First, and most importantly, none of the additions impacted the effects of the predictors of interest to such an extent that we would have come to different conclusions. In other words, the effects of all predictors of interest were sufficiently strong to remain significant, also in the presence of other predictors. Secondly, we wanted to avoid the risk of

over-fitting the models to our specific dataset, which would decrease the generalizability of our findings. Thirdly, since the addition of predictors had no impact on the effects of the predictors of interest, the models including a large number of predictors and interactions were unnecessarily complex, which needlessly complicated their interpretation. Lastly, the R statistical package (R Core Team, 2014) provided warning messages for some models including additional predictors, stating that it failed to produce a reliable model.

Fixed effects and interactions were only included in a model if they were statistically significant ($p < .05$). Random factors were only included if they significantly improved the model, which was tested by means of likelihood ratio tests. We established the random structure based on a simple model including only listener group as fixed factor before we added more fixed factors.

In order to investigate the existence of interlanguage speech intelligibility benefits, we also compared response accuracies on the American and Spanish English stimuli within each listener group. These analyses were carried out by means of logistic mixed effects models with the binomial link function. We ran twelve separate models (one for each of the three stimulus types within each of the four listener groups). In each model, response accuracy was the dependent variable. We tested for one fixed predictor, corpus, and three random factors: subject, speaker of the stimulus and stimulus. We applied Bonferroni correction for multiple tests. Only those effects with a $p < .004$ were considered significant.

Results

Figure 4.3 shows the mean accuracies of the four listener groups on the three stimulus types from each corpus. It clearly shows that *can't* without /t/ may lead to ambiguity. If we average over the American and Spanish English reduced tokens of *can't* and over all listener groups, *can't* was incorrectly perceived as *can* in 46% of the trials. That being said, there are clear

differences between the American and Spanish English stimuli. All listener groups, except for the Mandarin-Chinese listeners, performed at chance level on the Spanish English reduced tokens of *can't*. The Mandarin-Chinese listeners seem to have relied most heavily on the absence of /t/, since they were biased towards *can*. On the American English reduced tokens of *can't*, the Spanish and Mandarin-Chinese listeners performed at chance level, whereas the Dutch listeners were incorrect in 30% of the trials. The native listeners performed most accurately, but still incorrectly perceived reduced *can't* as *can* in 15% of the trials.

Another result that catches the eye is that, while the other three listener groups generally comprehended the American English stimuli more accurately than the Spanish English stimuli, this was not the case for the Spanish listeners. They found *can* and unreduced *can't* more comprehensible in Spanish English than in American English. Interestingly, however, the Spanish English reduced tokens of *can't* were as incomprehensible to them as the American English reduced pronunciations of *can't*. In other words, when it comes to comprehending reduced speech, the Spanish listeners did not seem to benefit from their shared L1 with the Spanish speakers of English in the corpus.

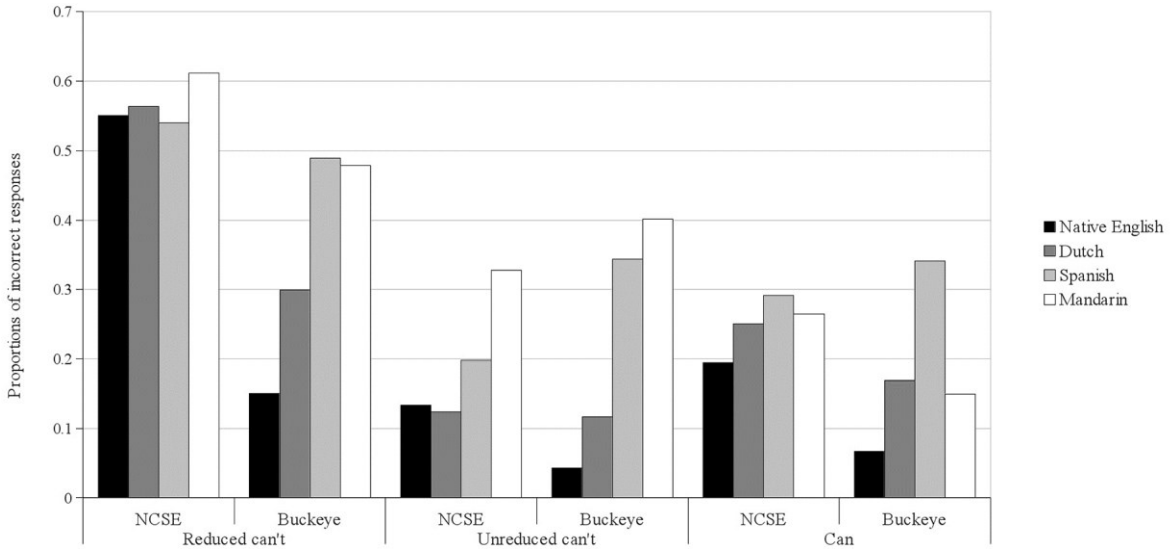

Figure 4.3

Proportions of incorrect responses to the can *and* can't *stimuli; split by corpus, stimulus type and listener group.*

We first performed statistical analyses on the full dataset. Table 4.7 presents our final model in an analysis of deviance table, produced by the Anova function from the Car package (Fox & Weisberg, 2011) for R. We found fixed effects of listener group, stimulus type, corpus and frequency rating. We also found several interactions, including a three-way interaction between listener group, stimulus type and corpus. To further explore these interactions, we performed additional analyses on subsets of our data split by stimulus type.

Table 4.7

Analysis of deviance table (Type II Wald chi-square tests) for the fixed effects in our final overall model predicting the accuracy of participants' responses.

Fixed effects	χ^2	*Df*	*p*
Listener group	228.19	3	< .001
Stimulus type	194.89	2	< .001
Corpus	5.17	1	< .05
Relative frequency rating	66.23	1	< .001
Listener group x Stimulus type	550.99	6	< .001
Listener group x Corpus	769.68	3	< .001
Stimulus type x Corpus	34.32	2	< .001
Listener group x Stimulus type x Corpus	48.46	6	< .001

Participants' accuracy on reduced can't stimuli

Table 4.8 shows the final model for the accuracies on the reduced *can't* stimuli. The interaction between listener group and corpus shows that listener groups' mean accuracies differ for Spanish English and American English stimuli. In order to investigate this in more detail, we split the reduced *can't* data by corpus.

Table 4.8

Statistical model for the accuracy of participants' responses to reduced can't *stimuli. The intercept represents native English listeners, listening to stimuli from the Buckeye Corpus.*

Fixed effects	*β*	*z*	*p*
Intercept	1.68	9.68	< .001
Listener group (Dutch)	-0.93	-6.17	< .001
Listener group (Spanish)	-1.86	-13.32	< .001
Listener group (Mandarin-Chinese)	-1.77	-10.75	< .001
Corpus (NCSE)	-2.14	-11.21	< .001
Frequency rating	0.05	3.77	< .001
Listener group (Dutch) x Corpus (NCSE)	0.88	7.06	< .001
Listener group (Spanish) x Corpus (NCSE)	1.90	16.40	< .001
Listener group (Mandarin-Chinese) x Corpus (NCSE)	1.49	10.89	< .001

Separate analyses of the Spanish reduced *can't* stimuli showed that the native English listeners performed as well as the Spanish and the Dutch listeners, and only performed more accurately than the Mandarin-Chinese listeners ($\beta = 0.33$, $z = 2.07$, $p < .05$). An analysis with the Mandarin-Chinese listeners on the intercept showed that they were also outperformed by the Spanish listeners ($\beta = 0.37$, $z = 2.43$, $p < .05$), but not by the Dutch listeners.

Separate analyses of the American English stimuli showed that the native English listeners performed more accurately than all three non-native listener groups ($\beta_{NL} = -0.93$, $z = -5.38$, $p < .001$; $\beta_{SP} = -1.89$, $z = -11.83$, $p < .001$; $\beta_{CH} = -1.76$, $z = -9.30$, $p < .001$). Running the same model with the Dutch listeners on the intercept revealed that the Dutch listeners performed more accurately than the Spanish ($\beta = 0.96$, $z = 5.99$, $p < .001$) and the Mandarin-Chinese ($\beta = 0.83$, $z = 4.40$, $p < .001$) listeners. The same model with the Mandarin-Chinese listeners on the intercept showed that the Spanish and Mandarin-Chinese listeners did not differ from each other.

Participants' accuracy on unreduced can't stimuli

Table 4.9 shows the final model for the accuracies on the unreduced *can't* stimuli. Again, we found an interaction between listener group and corpus and therefore split the data by corpus.

Table 4.9

Statistical model for the accuracy of participants' responses to unreduced can't *stimuli. The intercept represents native English listeners, listening to stimuli from the Buckeye Corpus.*

Fixed effects	*β*	*z*	*p*
Intercept	3.36	16.33	< .001
Listener group (Dutch)	-1.16	-5.83	< .001
Listener group (Spanish)	-2.74	-14.91	< .001
Listener group (Mandarin-Chinese)	-3.00	-14.02	< .001
Corpus (NCSE)	-1.01	-3.68	< .001
Listener group (Dutch) x Corpus (NCSE)	1.29	7.95	< .001
Listener group (Spanish) x Corpus (NCSE)	2.06	14.49	< .001
Listener group (Mandarin-Chinese) x Corpus (NCSE)	1.43	9.25	< .001

Analyses of only the Spanish English unreduced *can't* stimuli revealed that the Dutch and the native English listeners performed equally accurately, and more accurately than the Spanish (β = -0.68, z = -3.42, p < .001) and Mandarin-Chinese (β = -1.62, z = -6.96, p < .001) listeners. Running the same model with the Spanish listeners on the intercept showed that the Spanish listeners outperformed the Mandarin-Chinese listeners (β = 0.93, z = 4.20, p < .001).

Separate analyses of the American English stimuli showed that the native English listeners performed more accurately than all three non-native listener groups (β_{NL} = -1.17, z = -5.50, p < .001; β_{SP} = -2.77, z = -14.17, p < .001; β_{CH} = -3.03, z = -13.31, p < .001). An additional analysis with the Dutch listeners on the intercept revealed that the Dutch listeners performed more accurately than the Spanish (β = 1.60, z = 8.33, p < .001) and the Mandarin-Chinese (β = 1.86, z = 8.73, p < .001) listeners. The same analysis with the Spanish listeners on the intercept revealed that the Spanish and the Mandarin-Chinese listeners performed equally accurately.

Participants' accuracy on can stimuli

Table 4.10 shows the final model for the response accuracies to the *can* stimuli. Again, we found an interaction between listener group and corpus and therefore split the data by corpus.

Table 4.10

Statistical model for the accuracy of participants' responses to can *stimuli. The intercept represents native English listeners, listening to stimuli from the Buckeye Corpus.*

Fixed effects	*β*	*z*	*p*
Intercept	2.72	19.93	< .001
Listener group (Dutch)	-1.08	-6.70	< .001
Listener group (Spanish)	-2.09	-14.09	< .001
Listener group (Mandarin-Chinese)	-0.91	-5.12	< .001
Corpus (NCSE)	-1.22	-9.68	< .001
Frequency rating	0.03	3.04	< .01
Listener group (Dutch) x Corpus (NCSE)	0.74	7.39	< .001
Listener group (Spanish) x Corpus (NCSE)	1.52	16.67	< .001
Listener group (Mandarin-Chinese) x Corpus (NCSE)	0.49	4.48	< .001

Separate analyses of the Spanish English stimuli showed that the native English listeners performed better than all non-native listener groups (β_{NL} = -0.36, z = -2.41, p < .05; β_{SP} = -0.59, z = -4.28, p < .001; β_{CH} = -0.42, z = -2.59, p < .01). Running the model again with the Dutch listeners on the intercept showed that the accuracies of the three non-native listener groups did not differ from each other.

Separate analyses of the American English stimuli showed that, again, the native English listeners outperformed all non-native listener groups (β_{NL} = -1.13, z = -6.11, p < .001; β_{SP} = -2.16, z = -12.65, p < .001; β_{CH} = -0.95, z = -4.66, p < .001). The same analysis with the Dutch listeners on the intercept revealed that the Dutch and Mandarin-Chinese listeners performed equally accurately, and were more accurate than the Spanish listeners (β = -1.03, z = -6.01, p < .001).

Interlanguage speech intelligibility benefit

For further inspection of the three way interaction in our full dataset, we also split the data by listener group, in order to investigate for each group whether the listeners showed matched or mismatched interlanguage speech intelligibility benefits (see Bent & Bradlow, 2003; Stibbard

& Lee, 2006). We compared the accuracies on the Spanish English and the American English trials for each listener group and each stimulus type separately (see Table 4.11).

Unsurprisingly, the native English listeners performed more accurately on American English than on Spanish English stimuli, regardless of the stimulus type. The Spanish listeners' accuracies were as high for Spanish English as for American English *can* and reduced *can't* tokens, but higher for Spanish English than for American English unreduced *can't* tokens. The Dutch and Mandarin-Chinese listeners performed less accurately on the Spanish English than on the American English reduced *can't* tokens, but equally accurately on the unreduced *can't* tokens from both corpora. They differed for the *can* tokens, on which the Dutch listeners performed as accurately on the Spanish English as on the American English tokens, while the Mandarin-Chinese listeners performed more accurately on the American than on the Spanish English tokens.

Table 4.11

Results of the linear mixed effects models predicting accuracies for each listener group and each stimulus type separately. Only effects with p*-values below .004 were considered significant; cells that contain exact* p*-values represent non-significant effects. A positive* β *means that listeners performed more accurately on the American English than on the Spanish English stimuli.*

Listener group	Stimulus type								
	Reduced *can't*			Unreduced *can't*			*Can*		
	β	*z*	*p*	*β*	*z*	*p*	*β*	*z*	*p*
Native English	2.52	8.32	< .001	1.25	3.12	< .004	1.24	6.44	< .001
Spanish	0.21	1.27	.20	-0.99	-4.40	< .001	-0.33	-2.62	0.009
Dutch	1.42	4.98	< .001	-0.50	-1.25	0.21	0.45	2.69	0.007
Mandarin-Chinese	0.65	3.78	< .001	-0.39	-2.00	.05	0.80	6.57	< .001

Discussion and conclusions

Spanish English reduced *can't* trials were very ambiguous to all listener groups. Native English, Spanish and Dutch listeners comprehended *can* just as often as *can't*, while the Mandarin-Chinese listeners were biased towards *can*. The latter group of listeners apparently relied more on the presence or absence of /t/ than the other groups. This may be explained by

the absence of consonant clusters in their L1 (see e.g. Bent et al., 2007; Chang, 2001): since Mandarin-Chinese listeners are relatively unaccustomed to consonant clusters, they may have been reluctant to reconstruct a consonant cluster when the speech signal did not contain such a cluster (see also Mitterer & Tuinman, 2012; Mitterer et al., 2008). The same may have been true for the Spanish listeners, since their mother tongue also has fewer consonant clusters than English (see e.g. Coe, 2001). The fact that, nevertheless, the Spanish listeners performed more accurately than the Mandarin-Chinese listeners on the Spanish English reduced *can't* tokens may be due to their higher proficiencies.

The other stimulus types, including American English reduced *can't*, showed a different but rather consistent pattern. The native English listeners generally outperformed non-native listeners. They also coped well with the absence of /t/ from *can't* in their native tongue, as was expected based on Pitt's (2009) and Sumner and Samuel's (2005) findings.

The Dutch listeners were more accurate than the other non-native listeners on the American English reduced *can't* trials and on American and Spanish English unreduced *can't* trials. The fact that the Dutch listeners coped relatively well with the absence of /t/ in American English reduced *can't* tokens may be due to the fact that /t/-reduction is also frequent in Dutch (e.g. Hanique et al., 2013; Mitterer & Tuinman, 2012). Moreover, the Dutch listeners' exposure to (American) English, which is abundant on Dutch television and radio, may have played a role in their comprehension of English in general. Both these types of experience may have helped them cope well with linguistic variation, including (Spanish) accented English and variation in the realization of /t/ in American English *can't*, with which the Spanish and Mandarin-Chinese listeners may have had difficulties.

The Dutch listeners did not outperform the Spanish and Mandarin-Chinese listeners on Spanish English *can* tokens, and only the Spanish listeners on American English *can* tokens. The Mandarin-Chinese listeners' accuracies on American English *can* stimuli may

have benefited from their reliance on /t/ as the most important cue to decide whether *can* or *can't* was said: since no /t/ was present in the speech signal, they correctly perceived *can* to the same degree as the Dutch listeners.

We not only investigated differences between the four listener groups, but also compared the accuracies on the Spanish English and the American English trials for each listener group separately. Unsurprisingly, we found that native English listeners comprehended American English more accurately than Spanish English, regardless of the stimulus type. This is in line with Bent and Bradlow's (2003) and Stibbard and Lee's (2006) results.

Next, we found evidence for a matched interlanguage speech intelligibility benefit, based on the stringent definition of a benefit put forward by Stibbard and Lee (2006), but only for unreduced *can't* tokens: Spanish listeners comprehended Spanish English unreduced *can't* tokens more accurately than American English unreduced *can't* tokens.

We found no evidence for a mismatched interlanguage speech intelligibility benefit. The Dutch and the Mandarin-Chinese listeners never performed more accurately on the Spanish English than on the American English stimuli. Since no beneficial effect is found for *can* and unreduced *can't* tokens, and even a detrimental effect is found for reduced *can't* tokens, it remains questionable whether a mismatched interlanguage intelligibility benefit really exists (see also Stibbard & Lee, 2006).

General discussion and conclusion

This chapter investigated /t/-reduction in *can't*, both from a production and a comprehension point of view. First, we examined the pervasiveness of the absence of /t/ from *can't* in a corpus study of almost 500 tokens of *can't* produced by American native and Spanish non-native speakers of English. This study revealed that /t/ is absent from *can't* rather often in

American English, namely in 33% of the tokens, and even more often in Spanish English, in 40% of the tokens. This finding is an addition to the growing body of research showing that reduction is a common phenomenon in both native and non-native speech (see e.g. Ernestus & Warner, 2011; Johnson, 2004).

Furthermore, our corpus analyses indicated that Spanish L2 users of English reduce more often in informal than in formal speech, which is in line with previous findings for native speech (see e.g. Warner & Tucker, 2011; Ernestus et al., 2015). Our study is the first, to our knowledge, to provide within speaker evidence of the influence of the situational context on non-native speech reduction.

The fact that /t/ is rather often absent from *can't*, may seem surprising, since the /t/ in *can't* is a single segment morpheme. In line with Labov's (1972) work on /t/-reduction in American Black Vernacular English, which he found to be less frequent when /t/ was an inflectional morpheme than when it was non-morphemic, the /t/ in *can't* may be expected to not be absent so frequently. Losiewicz (1992) puts forward a similar claim, stating that morphemic /t/ (e.g. in *tacked*) is longer than non-morphemic /t/ (e.g. in *tact*). In contrast, Plag, Homann and Kunter's (2015) investigation of the realization of American English word final non-morphemic and morphemic /s/ (e.g. marker of plural, genitive or 3rd person singular) shows the exact opposite: non-morphemic /s/ was longer than morphemic /s/. Our findings add to this debate, showing that even if the absence of word-final /t/ seems to lead to a word token with the exact opposite meaning, reduction of morphemic /t/ does occur, in both native English and non-native (Spanish) English speech.

We also investigated the durations of Spanish English and American English *can*, reduced *can't* (without /t/) and unreduced *can't* (with /t/) tokens and of their phones. This analysis suggests that Spanish English realizations of *can't* are particularly ambiguous to listeners, because the durational cues in the Spanish English reduced *can't* tokens provide

conflicting cues. In addition to the absence of /t/, several cues suggest that *can* was said: the mean duration of *can* and reduced *can't* tokens are exactly the same, and the mean duration of the vowels in these tokens are also very similar. The /n/ in reduced *can't* tokens may point listeners in the direction of *can't*, since its mean duration is similar to the mean duration of /n/ in unreduced *can't*. The length of /k/ provides no clear information to help listeners choose between *can* and *can't*, because it is in between the mean durations of /k/ in *can* and unreduced *can't*.

In contrast, the American English reduced tokens of *can't* seem to provide durational cues that may help listeners to perceive *can't* rather than *can*. The mean durations of the phones in reduced *can't* tokens are very similar to those in unreduced *can't* tokens. The reduced *can't* tokens thus carry durational information pointing listeners towards *can't*, so /t/ may not be necessary to listeners for correct speech comprehension.

We tested whether Spanish English reduced tokens of *can't* are more ambiguous to listeners than American English tokens of *can't* in a comprehension experiment. The response accuracies of four different listener groups (native English, Spanish, Dutch and Mandarin-Chinese listeners) showed that there are indeed rather large differences between the Spanish and American reduced *can't* tokens. The Spanish English reduced tokens of *can't* were ambiguous to all listener groups: the native English, Dutch and Spanish listeners performed at chance level, while the Mandarin-Chinese listeners were even biased towards *can*.

The American English reduced tokens of *can't* showed a different picture. Native English and Dutch listeners, although to a lesser degree, rather accurately perceived *can't*, even though no /t/ was present in the speech signal. These listeners seem to have picked up on the durational cues carried by the other phones. In contrast, the Spanish and Mandarin-Chinese listeners performed at chance level on the American English reduced *can't* tokens as

well. For them, the durational cues did not seem to provide enough evidence that *can't* was uttered. This is probably due to the fact that they are relatively unaccustomed to variability in vowel length, since their mother tongues show less of such variability (see e.g. Coe, 2001, for Spanish; Chang, 2001, for Mandarin-Chinese).

We are well aware that by explaining our results solely on durational cues, we may overlook more subtle acoustic cues that could be present in the speech signal, such as nasalization of the vowel and pitch. The differences in duration may in reality be a reflection of other types of acoustic information that are perceptually more relevant. Our study should be seen as a first step towards understanding the production and perception of *can* and *can't* in native and non-native speech. Future research could provide additional insight in the influence of fine phonetic detail in the production of *can* and *can't* and the role it plays in comprehension.

Our data also revealed that Spanish listeners benefited from their shared L1 with the Spanish speakers of the stimuli in the comprehension experiment, but only for Spanish English unreduced *can't*, which was comprehended more accurately than American English unreduced *can't*. Furthermore, we found no evidence for a mismatched speech intelligibility benefit (see also Stibbard & Lee, 2006): the Dutch and Mandarin-Chinese listeners generally comprehended American English more accurately than Spanish English, or as accurately as Spanish English. Interestingly, there is no matched, nor a mismatched interlanguage speech intelligibility benefit for reduced *can't* tokens.

To conclude, /t/ is absent rather often from *can't* in both native and non-native speech, despite the fact that the risk of ambiguity is rather large when *can't* is pronounced without /t/. Our findings suggest that reduction by non-native speakers of English renders their speech particularly difficult to comprehend for other non-native and for native speakers of English. Therefore, those who are involved in international communication in English should be

aware that /t/ reduction in *can't* may have unexpected consequences. Doctors who are not native English speakers, for instance, are advised to clearly pronounce their consonant clusters when they tell patients what they can or cannot do with their medication. If *can't* is pronounced without /t/, they may risk being misheard, which could have severe consequences for their patients and for themselves, like in the case of the Greek doctor that we presented in the beginning of this chapter.

5 Five

Cinco

Vijf

Summary and General Discussion

The studies presented in this thesis form a multidisciplinary investigation of non-native (Spanish) English speech produced in a formal and an informal speech situation in order to find out how the situational context affects *lingua franca* communication among non-native speakers of English.

All studies were (in part) based on the Nijmegen Corpus of Spanish English. In the following paragraphs I will first shortly recapitulate the compilation of this corpus and point out some of its methodological advantages. Then, I will shortly summarize the findings of the three main chapters in this thesis, and indicate how they contribute to the overall picture of non-native situational variation. Next, I will discuss the implications of my findings, and provide suggestions for future research.

The Nijmegen Corpus of Spanish English

The Nijmegen Corpus of Spanish English (NCSE) includes 34 Spanish L2 speakers of English. All Spanish speakers first had an informal, peer to peer conversation (45 minutes, on average) with a Dutch confederate speaker who they were led to believe was just another participant in the project. The interlocutors spoke freely about everyday matters, such as the city of Madrid, travels and football.

Next, each Spanish speaker was interviewed about Spanish current affairs in a formal setting (25 minutes, on average) by a second Dutch confederate, who was introduced as a master's student working on a journalism graduation project, which would include interviews with both politicians and youngsters. Several changes were made to the situational context, in order to enhance the formality of the speech situation: both interlocutors wore formal clothing (see e.g. Slepian, Ferber, Gold & Rutchick, 2015, for the effect of wearing formal clothing on thought processes), the relationship between the interlocutors was asymmetrical, the interviewers too behaved and spoke more formally (i.e. as if they were speaking with

their boss or a client), the topics were more serious and the interview was videotaped by a video camera that was clearly visible.

After the recordings, the Spanish speakers in the NCSE were asked to evaluate the naturalness of both speech situations. These evaluations showed that, although the speech was recorded in a sound attenuated booth, the Spanish speakers perceived the communication as being natural in both speech situations (i.e. over 4 on a 7-point scale), and that the naturalness of the peer to peer conversations (M = 6.19, SD = 1.13) was rated higher than that of the formal interviews (M = 5.31, SD = 1.09). The speakers were also asked to rate the formality of both speech situations. The interview was rated as more formal (M = 5.47, SD = 1.42) than the peer to peer conversation (M = 3.62, SD = 1.89), which indicates that the manipulation of the formality of the speech situations was successful.

The NCSE holds a rather large amount of speech for every Spanish speaker in the two situational contexts (about 229,000 word tokens in total; 138,000 of which in 15 hours of informal speech, and 91,000 in 9.5 hours of formal speech). Thanks to the design of the corpus and its contents, within-speaker analyses of the same speakers in two different speech situations are possible. Consequently, generalizable claims may be made based on a fairly restricted number of speakers. Laboratory quality audio recordings are combined with video recordings, such that multimodal analyses of formal and informal communication may be carried out.

Situational variation on three linguistic levels

In the three main chapters of the present thesis I focused on one modality, namely speech. I approached the speech data from three different perspectives in order to study the impact of the situational context on non-native speech on various linguistic levels: register variation, discourse management and pronunciation.

Register variation

In Chapter 2, I investigated whether register variation, or situational variation, was observable between the two speech situations. I showed that the Spanish speakers laughed almost five times more often, produced almost five times more speech that overlapped with their interlocutors' speech, and inserted about three times more Spanish words in their English in the informal conversation than in the formal interview.

I also found differences with regard to the frequencies of occurrence of a number of linguistic features from Biber and colleagues' dimension of involved and informational language (Biber, 1988; Biber, Conrad & Reppen, 1998). In general, the Spanish speakers' language use during the formal interviews was shown to be more adapted to explicit information transmission than the language use in the informal conversations. Four of the five informational features (nouns, prepositional phrases, attributive adjectives, long words) were found to be more frequent in formal than in informal speech; only the word type/word token ratio showed no difference between the two speech situations. The involved features showed a more diffuse picture: some were used more frequently during the informal conversations, as was expected (second person pronouns, the pronoun 'it', 'be' as a main verb), while others showed no difference (e.g. first person pronouns and demonstrative pronouns), which is probably due to the fact that both speech situations were face to face, oral interactions. Yet another group of involved features were used more frequently during the formal interviews, which was opposite to what was expected (private verbs, causative subordination, possibility modals and present tense verbs).

Interestingly, this latter group of linguistic features in particular reflects the Spanish L2 speakers' non-nativeness. Politically oriented discourse in Spanish is characterized by a high score on a second dimension that Biber, Davies, Jones and Tracy-Ventura (2006) have named 'spoken "irrealis" discourse', which is characterized by features such as subjunctive

and conditional verbs. These features can be used to express opinions or hypothetical situations (Biber et al., 2006). The Spanish speakers may have relied on knowledge about this specific type of discourse in their L1 during their formal, politically orientated interviews in the NCSE. However in English, since unlike in Spanish, features such as subjunctive verbs were not available to the speakers, who therefore made use of English linguistic features that they deemed appropriate to fulfil similar functions (e.g. private verbs, possibility modals).

The study presented in Chapter 2 was the first, to my knowledge, to adapt Biber and colleagues' (Biber, 1988; Biber et al., 1998) register variation perspective to investigate non-native language. Methodologically, it has shown that an adaptation of Biber et al.'s (Biber, 1988; Biber et al., 1998) multidimensional approach results in a viable approach to study non-native, lingua franca communication.

Discourse management

Chapter 3 presented an investigation of the influence of the situational context on non-native speakers' discourse management. More specifically, I examined which communication strategies the Spanish speakers used most frequently when they were faced with (potential) linguistic difficulties in English and whether some strategies were used more frequently in formal, and others in informal communication. First, I found that strategies that allow speakers to communicate their intended meaning without the help of their interlocutor were most frequently used, which I proposed to be governed by the speakers' protection of their positive face (Brown & Levinson, 1987). Examples are circumlocutions such as "*associations [breath] of of employers and and they they transmit to the government what the employers think*" (for 'labor union'; *M17_F_207-208*) and "*in the airplanes they have like a telephone like it is not a telephone it is like where the s\- hm eh they have like something where they speak to the people of the of the plane*" (for 'intercom'; *M3_F_932-937*), and

approximations such as "*to buy smoke*" (for 'cigarettes'; *F17_I_360*) and "*my mother work in the minister*" (for 'ministry; *F1_I_50*).

Secondly, I found that relatively informative and cognitively effortful strategies were more frequently used in formal than in informal speech, whereas relatively less informative and cognitively effortless strategies were used more often in informal than in formal speech. I explained this finding based on the least effort and cooperative principles (Grice, 1975; Poulisse, 1993), arguing that less effort was put into communication strategies in informal speech, and more cooperative behavior was shown in formal speech. Examples of relatively informative strategies are reformulation, as in "*they are not eh they are not lose your they eh they do not lose your eh their job their job and*" (*M7_F_82-89*) where the speaker wants to use the right pronouns even though the message seems clear at an early stage, and foreignizing, as in "*the dictadure of Franco*" (from Spanish *dictadura*, 'dictatorship'; *M4_F_472*), where the speaker tries to avoid code-switching by making the Spanish words more English like. Code switches, such as "*you are very timida*" (for 'shy'; *F17_I_430*), are the most striking example of relatively less informative and effortless strategies.

The study of communication strategy use in Chapter 3 contributes to both SLA and ELF research. Given the nature of the data in the NCSE I took a speaker oriented approach similar to that of SLA scholars, rather than an interaction oriented approach that is characteristic of ELF research. This perspective allowed for the creation of a new coding scheme that was based on SLA research, but that was tested on data that were not from language learners. The study shows that the communication strategies that were identified within the SLA paradigm are also used in real-life communicative settings. Furthermore, the new taxonomy that I proposed, which was firmly anchored in linguistic theory, was supported by my findings. Most importantly, the study reveals that the task effects that SLA scholars found based on classroom data (see e.g. Poulisse, 1993; Poulisse & Schils, 1989)

reflect situational variation that also is apparent when non-classroom speech situations, i.e. not oriented towards language acquisition, with different degrees of formality are compared.

This comparative result is also the main contribution to the ELF literature, since my quantitative, comparative approach towards communication strategy use complements the qualitative, Conversation Analysis type of approach, which is typically chosen by ELF scholars. My findings show that ELF research can benefit from data from slightly controlled speech situations and the use of quantitative, comparative methods.

Pronunciation

Chapter 4 investigated situational variation on a third linguistic level, that of pronunciation. I specifically looked at /t/-reduction in *can't*. I showed in a corpus study that the /t/ is more often absent from *can't* in informal than in formal Spanish English (in 47% and 34% of the tokens, respectively). This is in line with the behavior of native speakers of different languages (see e.g. Warner & Tucker, 2011, for American English; Ernestus, Hanique & Verboom, 2015, for Dutch). I also compared American and Spanish English tokens of *can't* and found that the Spanish speakers of English produced *can't* more often without /t/ (40% of the tokens) than American speakers of English (33% of the tokens). Inspection of the word token and phone durations of *can't* tokens showed that when /t/ is absent from *can't* in American English, the phones that remain are much like the phones in *can't* with /t/, while in Spanish English, the phones in *can't* without /t/ are very similar to those in *can*, which potentially leads to ambiguity.

To investigate how this influences speech comprehension, I conducted an experiment with stimuli based on a subset of the *can* and *can't* tokens in the corpus study. Four listener groups were included: native English listeners, who generally deal well with reductions in native English, but possibly not in non-native English; Spanish listeners, who share their L1

with the Spanish speakers of the L2 stimuli; Dutch listeners, whose L1 is typologically close to English, but less so to Spanish; and Mandarin-Chinese listeners, whose language is typologically distant, but who generally share difficulties with consonant clusters in English with Spanish speakers of English (see e.g. Bent, Bradlow & Smith, 2007; Chang, 2001).

The experimental results reveal the ambiguity of Spanish English *can't* when it is uttered without /t/: native English, Spanish and Dutch listeners performed at chance level, comprehending reduced *can't* about as often as *can*, while the Mandarin-Chinese listeners comprehended *can* in about 60% of the stimuli. The American English *can't* tokens without /t/ were much less ambiguous, at least to native English and Dutch listeners, who comprehended *can't* in about 15% and 30% of the cases, respectively, but still quite difficult to comprehend for Spanish and Mandarin-Chinese listeners, who performed at chance level.

Chapter 4 contributes to the field of phonetics in two major ways. First, it is among the first studies into non-native speech reduction. Secondly, it features a comprehension experiment with stimuli taken from stretches of spontaneous speech. The study shows that natural speech can be effectively used in comprehension experiments to enhance ecological validity. A third contribution of this study therefore is that it may help create bridges between traditionally distant disciplines such as the ELF paradigm and psycholinguistics.

Three linguistic levels combined: effort and clarity

Together, the studies of three different linguistic levels reveal that situational variation exists in non-native, lingua franca English speech. Not only were the speakers in the NCSE conscious of a change in formality between the peer to peer conversation and the interview, this change was also reflected in their speech. Furthermore, the three studies show that the non-native English speakers consistently encoded more and more specific information on several linguistic levels in the formal speech situation than in the informal speech situation.

In Chapter 3, I proposed a continuum based on the least effort and cooperative principles inspired by Poulisse (1993) and Grice (1975) to explain differences in speakers' communication strategy use between the formal interviews and the informal, peer to peer conversations. The basic assumption underlying this continuum is that speakers are cooperative in order to get their message across, i.e. they do not purposely complicate the interpretation of their message, but that they also try to minimize cognitive effort where possible. The result is a trade-off between these conflicting principles. In line with Poulisse (1993), I argued that relatively more informative and more effortful strategies are used more frequently in formal speech situations than in informal speech situations, because of a more stringent need to convey information. In contrast, since stakes are generally lower in casual, peer to peer conversations, speakers use relatively less informative and less effortful strategies more frequently in informal than in formal speech. My findings based on the NCSE reflect this trade-off.

I posit that a similar reasoning can account for the findings in Chapters 2 and 4. First, from a register variation point of view, when speakers opt for a dense way of information presentation, this requires more cognitive effort than when they would talk in a casual way. For example, prepositional phrases modifying nouns can be argued to be cognitively costly, and are used more often during the formal interviews than during the informal conversations. In contrast, replacing noun phrases by 'it', for instance, is relatively effortless, and occurs more often in the peer to peer conversations than in the interviews. Secondly, on the level of pronunciation a similar pattern is observable: the absence of /t/ from *can't* is more frequent in informal than in formal speech, suggesting that less effort is put into pronunciation during the informal conversations than during the formal interviews.

In short, my findings show that during the formal interviews, the Spanish speakers of English were inclined to produce more informative language on all three linguistic levels.

The situational context led them to being more focused on the need to communicate their intended meaning. Consequently, the speakers put more effort into linguistically encoding their intended message in order to enhance the probability that the meaning is successfully communicated to their interlocutor.

Theories that propose conflicting, speaker-oriented and listener-oriented principles have been put forward in several disciplines. For example, Horn's neo-Gricean dualistic model of implicature (see e.g. Horn, 2005), which was developed in the field of pragmatics, reflects a very similar line of thought. Horn argues that two opposing principles favor either the speaker or the hearer in speech production. The Q principle ('Say enough') dictates that a speaker should provide sufficient informative content for the hearer to understand the utterance, while in contrast, the R principle ('Don't say too much') dictates that a speaker should say just enough for the utterance to be understood (Horn, 2005; see Carston, 2005, and Levinson, 2000, for different perspectives). In the field of phonetics, Lindblom's (1983, 1990) H&H theory proposes a comparable continuum ranging from hyper- to hypospeech, where hyperspeech is clearly articulated speech that is relatively costly in terms of energy use, and hypospeech is economically produced, but possibly less clear speech. Speakers are argued to take into account characteristics of the ongoing discourse in order to provide sufficient phonetic contrast in their speech signal such that it allows for lexical access in listeners.

The multidisciplinary approach in this thesis has resulted in a collection of findings that together support two major conclusions. First, theories such as Horn's (2005) dualistic model of implicature and Lindblom's (1983, 1990) H&H theory that have been developed in different disciplines can be said to reflect a general theory of economy and of cooperation in communication. The speakers in my studies show language behavior that is generally more

economical in informal speech situations, and more cooperative in formal speech situations. Importantly, this is reflected simultaneously on three different linguistic levels.

Secondly, while Horn's (2005) and Lindblom's (1983, 1990) theories have been developed based on native speech, my studies have shown that speakers also take into account the situational context when they use their L2, and that the situational context co-determines the position they take on the continuum ranging from effortless to effortful language production. Non-native speakers too show more economical language behavior in informal situations, compared to formal speech situations. My results therefore provide additional evidence that, outside the classroom, L2 speakers of English are above all L2 users, rather than L2 learners. It can be argued that if non-native speakers' primary objective would be to acquire perfect English, they would at any time spend as much cognitive effort as possible in order to get it 'right', i.e. to match native norms in terms of grammar, vocabulary and pronunciation, for instance. Instead, my findings show that L2 users behave somewhat more leniently in informal than in formal speech, as do native speakers.

Future research

The choices that I made when I compiled the Nijmegen Corpus of Spanish English, in particular to include confederate speakers and to record Spanish and Dutch speakers of English, have had an impact on the analyses carried out in this thesis. I posit that, despite the presence of confederate speakers, the data in the NCSE were natural enough to be representative of real-life speech situations, and hence are a valuable addition to existing corpora. Nevertheless, an important next step, notably for ELF scholars who might question the naturalness of the data in the NCSE due to the presence of confederate speakers, may be to conduct within speaker, comparative studies of situational variation based on naturally occurring speech from different communicative settings. Real-life speech situations with different degrees of formality that involve (approximately) the same participants may provide

the data necessary for such an undertaking. Examples are business meetings versus organizational lunches, or scientific discussions at a conference versus the welcome reception, or a dinner, at the same conference. Such data may be less suitable for analyses of pronunciation due to the lack of control over background noise, but for the study other linguistic levels, a corpus holding naturally occurring speech involving the same speakers in different speech situations, could be a valuable addition to the field of ELF investigations.

Alternatively, my work, which had a clear comparative component, may have paved the way for the investigation of non-native register variation following Biber et al.'s (Biber, 1988; Biber et al., 1998) multidimensional, factor analysis approach more closely. In Chapter 2, I only focused on one dimension, the involved versus informational dimension, which Biber and colleagues' identified as the most prominent dimension of register variation in English (Biber, 1988; Biber et al., 1998) and Spanish (Biber et al., 2006). I have shown that such a narrower focus on register variation is an interesting approach towards non-native speech. However, multidimensional analyses of non-native English speech could further our knowledge on non-native register variation. Such studies may reveal whether similar or different dimensions are identified compared to the various native languages for which multidimensional analyses have already been carried out, such as English, Spanish and Korean. While multidimensional analyses have also been carried out for several native varieties of English (Xiao, 2009), for native and non-native academic writing (Cao & Xiao, 2013) and for L2 Spanish writing (Asención-Delaney & Collentine, 2011), no study has been undertaken to analyze non-native (English) speech. Existing ELF corpora such as the VOICE corpus (Seidlhofer, 2010) and the ELFA corpus (Mauranen, Hynninen & Ranta, 2010), which include a range of different speech situations, might form a good starting point for such an endeavor. I have argued why these corpora may be less suitable for comparative studies, given the large variability in speakers involved in different speech situations, for example,

but these drawbacks may be less important for the multidimensional approach based on factor analyses.

My choice to include Spanish and Dutch speakers of English, instead of speakers with other language backgrounds, was in part based on practical considerations, such as the small probability that Spanish and Dutch speakers (at least the Dutch speakers involved in the recordings of the NCSE) could rely on each other's language for communication. However, more importantly, there were also linguistic differences, in particular when it comes to pronunciation, between Spanish on the one hand, and Dutch and English on the other hand, which made this combination of languages a relevant one to investigate.

For example, the NCSE was particularly suitable to study Spanish speakers' /t/-reduction in English *can't*. This word-final /t/-reduction was especially interesting due to Spanish speakers' general difficulties with consonant clusters (see e.g. Coe, 2001). Non-native speakers with other L1 backgrounds may transfer different reduction patterns from their L1s into their L2 English speech. Therefore, an investigation of speech reductions produced by non-native users of English with different L1 backgrounds, both in *can't* and in other contexts, will provide more insight in speech production and comprehension by other non-native users of English. Such investigations will also complement previous research that focuses on ELF pronunciation (see Jenkins, Cogo & Dewey, 2011, for an overview) and may find that the potential harmful nature of reductions in non-native speech may be moderated by non-native listeners' L1 (see e.g. Mitterer, Yoneyama & Ernestus, 2008; Mitterer & Tuinman, 2012): a given L1 background may help listeners cope well with certain types of speech reductions, in particular the ones that they are familiar with, while other types of reductions may be more problematic.

The studies of the other linguistic levels in this thesis may also very well be carried out with other non-native speakers of English to provide a more complete picture of non-

native situational variation. Future research could, for instance, include comparative analyses that are similar to those in Chapter 2, based on Biber and colleagues' work (Biber, 1988; Biber et al., 1998) with non-native English speakers of different L1 backgrounds, in order to examine whether they too use some linguistic features in a way that is comparable to native speakers of English, while at the same time showing influences from their L1 on their use of other linguistic features. Speakers with different L1s may also use particular communication strategies more or less frequently, for example because the typological relation between English and their L1 allows for code-switches to be more or less easily understood by interlocutors.

Possibly, some details may be different with other combinations of L1s, but I believe that the main conclusion, namely that informal speech carries less and less specific information than formal speech on several linguistic levels, could also have been drawn based on speech produced by other non-native speakers, with different L1 backgrounds. In other words, although further research would need to confirm this, I believe that the Spanish speakers in my thesis represent non-native speakers of English in general, at least when it comes to register variation and the ways in which this situational variation reflects both characteristics of native English and characteristics that reveal the speakers' non-nativeness.

Future research may also investigate non-native situational variation in a modality that I have left unstudied in my thesis, namely that of gestures. This avenue of research could benefit from the data in the NCSE. The non-native speakers' gestural behavior in both an informal and a formal speech situation may be compared in a within-speaker design. Such studies would complement the work on the speech modality, in particular on the discourse management and phonetic levels. On the phonetic level, for instance, reduced speech may be more easily understood by interlocutors when gestures and other non-verbal communication provide additional cues for the correct understanding of the utterances.

In instances of linguistic difficulty, for example, non-native speakers may benefit greatly from non-verbal communication, both gestures and head or eye movements (see e.g. Gullberg, 2008, on L2 users' gestural behavior; and Wagner, Malisz & Kopp, 2014, for a general overview of the interaction between gestures and speech). Gestures may serve different functions, as is illustrated by two examples from the NCSE. One speaker could not find the word 'cybercafé', so she used a circumlocution to describe it, "*a place like a shop when you go and you can use [breath] eh the computers and the internet*" (*F3_I_464-466*), while simultaneously making a rather iconic typing gesture (see left panel of Figure 5.1). The typing gesture may have referred to the cybercafé, or to the computer or internet. In any case, it provides additional information to the interlocutor. Another speaker was trying to find the right pronunciation of the word 'island', and while searching repetitively drew circles on the table (see right panel of Figure 5.1). This gesture can, again, be said to be an iconic depiction of the island, but through its repetitive nature, it may also have assisted the speaker in the lexical retrieval process (see Wagner et al., 2014, for a short overview on work on the *Lexical Retrieval Hypothesis*, and other hypotheses on speech and gesture production).

Figure 5.1

Two different gestures made during laborious lexical searches; iconic typing gesture (left) and circle gesture (right) which may be iconic, but may also aid the lexical retrieval process.

An additional avenue of research that I have only touched upon in Chapter 1, but did not truly investigate in this thesis, is non-native speakers' perceived ability to adapt their

language to the situational context. While my studies have shown that linguistic variation exists on multiple levels, and thus that non-native speakers are capable of adapting their language to the speech situation, L2 users themselves may still feel insecure about their own capabilities to talk appropriately in either an informal or a formal speech situation (see e.g. Pavlenko, 2003, on non-natives' perceptions of their own non-nativeness; Tange & Lauring, 2009). For example, speakers who consider themselves witty in their mother tongue may feel that their clever humor does not easily come out in their casual L2 English. Inversely, L2 users who acquired English through informal contacts in daily life or on the internet, for example, may feel incapable of doing business in formal situations in English. These feelings of insecurity may exist regardless of the speakers' actual linguistic abilities, and could form a real threat to these speakers' successfulness in L2 English, and therefore deserve scholarly attention. The investigations of feelings of insecurity and of possible effects of L2 use on personality (see e.g. Dewaele, 2015) will require a different approach than the corpus methodology taken in this thesis. Actual language behavior may be less important, but self-report data is the key focus of such investigations.

A final opportunity for further research worth mentioning here is the influence of cultural background on non-native communication in general, and on non-native register variation in particular. Whereas thus far, I have mainly explained non-native linguistic behavior by focusing on characteristics of the speakers' mother tongue, it might also be fruitful to investigate how different cultural backgrounds affect situational variation. For instance, non-native speakers of English with a cultural background that is not western European may not only be influenced by their typologically distant languages, but also by their cultural backgrounds. Culturally determined knowledge about particular speech events, such as the formal interview, may play a crucial role in linguistic behavior in non-native English.

Alter-native English

While I stated in Chapter 1 that I did not intend to avoid the use of the term non-native, and I used this notion throughout my thesis, my view on L2 users of English, which I share with ELF scholars, is best captured by referring to these speakers as 'alter-natives': they speak an alternative variety of English that may be different from native English, but that serves the purpose of the alter-native speakers well and that generally gets their message across successfully. My studies have shown that the Spanish users of English are not incompetent learners, but L2 users of English in their own alter-native way. Where I made comparisons with native speakers of English, this was never in order to reveal that alter-native speakers were not (yet) capable of showing native-like language behavior, but always to provide a background to clarify my findings.

To conclude, my studies have shown that L2 users of English adapt their language to the situational context on at least three different linguistic levels. In general, all three linguistic levels showed that formal speech was more informative than informal speech. The speakers partly showed native-like patterns of situational variation, and partly revealed patterns from their mother tongue in their L2 English. Their speech is thus not a native English way but an alter-native English way of communicating, which reflects the L2 speakers' identities and is successful in most cases – Spanish alter-native speakers of English should just be careful when they say whether they can or cannot have tea.

References

Adamson, H. D. & Regan, V. M. (1991). The acquisition of community speech norms by Asian immigrants learning English as a second language. *Studies in Second Language Acquisition*, *13*(1), 1-22.

Aijmer, K. (2004). Pragmatic markers in spoken interlanguage. *Nordic Journal of English Studies*, *3*(1), 173-190.

Asención-Delaney, Y. & Collentine, J. (2011). A multidimensional analysis of a written L2 Spanish corpus. *Applied linguistics*, *32*(3), 299-322.

Baayen, R. H., Piepenbrock, R. & Gulikers, L. (1995). *The CELEX lexical database* (CD-ROM). Philadelphia, PA: Linguistic Data Consortium, University of Pennsylvania.

Baker, R. E., Baese-Berk, M., Bonnasse-Gahot, L., Kim, M., Van Engen, K. J. & Bradlow, A. R. (2011). Word durations in non-native English. *Journal of phonetics*, *39*, 1-17.

Baldwin, J. R. & French, P. (1990). *Forensic phonetics*. London: Pinter.

Bartlett, F. C. (1932). *Remembering: A study in experimental and social psychology*. Cambridge: Cambridge University Press.

Batchelor, R. E. & San José, M. Á. (2010). *A reference grammar of Spanish*. Cambridge: Cambridge University Press.

Bell, A., Brenier, J. M., Gregory, M., Girand, C. & Jurafsky, D. (2009). Predictability effects on durations of content and function words in conversational English. *Journal of Memory and Language*, *60*, 92-111.

Beneke, J. (1991). Englisch als lingua franca oder als Medium interkultureller Kommunikation. In R. Grebing (Ed.), *Grenzenloses Sprachenlernen* (pp. 54–66). Berlin: Cornelsen.

Bent, T. & Bradlow, A. R. (2003). The interlanguage speech intelligibility benefit. *The Journal of the Acoustical Society of America*, *114*, 1600-1610.

Bent, T., Bradlow, A. R. & Smith, B. L. (2007). Segmental errors in different word positions and their effects on intelligibility of non-native speech. In O. S. Bohn & M. J. Munro (Eds.), *Language experience in second language speech learning* (pp. 331-347). Amsterdam: John Benjamins Publishing.

Best, D. L. & Williams, J. E. (2001). Gender and culture. In D. E. Matsumoto (Ed.), *The Handbook of Culture and Psychology* (pp. 195-219). Oxford: Oxford University Press.

Biber, D. (1988). *Variation across speech and writing*. Cambridge: Cambridge University Press.

Biber, D. (1995). *Dimensions of register variation: A cross-linguistic comparison*. Cambridge: Cambridge University Press.

Biber, D. (2004). Conversation text types: A multi-dimensional analysis. In G. Purnelle, C. Fairon & A. Dister (Eds.), *Le poids des mots: Proceedings of the 7th International Conference on the Statistical Analysis of Textual Data* (pp. 15-34). Louvain-la-Neuve: Presses universitaires de Louvain.

Biber, D. & Conrad, S. (2009). *Register, Genre, and Style*. Cambridge: Cambridge University Press.

Biber, D., Conrad, S. & Reppen, R. (1998). *Corpus linguistics: Investigating language structure and use*. Cambridge: Cambridge University Press.

Biber, D., Davies, M., Jones, J. K. & Tracy-Ventura, N. (2006). Spoken and written register variation in Spanish: A multi-dimensional analysis. *Corpora*, *1*(1), 1-37.

Björkman, B. (2011). Pragmatic strategies in English as an academic lingua franca: Ways of achieving communicative effectiveness?. *Journal of Pragmatics*, *43*(4), 950-964.

Björkman, B. (2014). An analysis of polyadic English as a lingua franca (ELF) speech: A communicative strategies framework. *Journal of Pragmatics*, *66*, 122-138.

Blum-Kulka, S. & House, J. (1989). Cross-Cultural and Situational Variation in Requesting Behavior. In S. Blum-Kulka, J. House & G. Kasper (Eds.), *Cross-cultural pragmatics: Requests and apologies* (pp. 123-154). Norwood: Ablex Publishing Corporation.

Blum-Kulka, S., House, J. & Kasper, G. (1989). Investigating Cross-Cultural Pragmatics: An Introductory Overview. In S. Blum-Kulka, J. House & G. Kasper (Eds.), *Cross-cultural pragmatics: Requests and apologies* (pp. 1-34). Norwood: Ablex Publishing Corporation.

Boersma, P. & Weenink, D. (2012). *Praat: doing phonetics by computer* (Computer program). Version 5.3.04, retrieved 16 January 2012 from http://www.praat.org/.

Boletín Oficial del Estado. N^{o} 178, 26 July 2011. Sec. I, 84119-84138.

Bourdieu, P. (1991). *Language and Symbolic Power*. Cambridge: Polity Press.

Breiteneder, A., Pitzl, M. L., Majewski, S. & Klimpfinger, T. (2006). VOICE recording-Methodological challenges in the compilation of a corpus of spoken ELF. *Nordic Journal of English Studies*, *5*(2), 161-87.

Brown, P. & Levinson, S. C. (1987). *Politeness: Some universals in language usage*. Cambridge: Cambridge University Press.

Calvet, L.-J. (1999). *Pour une écologie des langues du monde*. Paris: Plon.

Cameron, D. (2001). *Working with Spoken Discourse*. London: Sage Publications.

Canale, M. & Swain, M. (1980). Theoretical bases of communicative approaches to second language teaching and testing. *Applied linguistics*, *1*(1), 1-47.

Cao, Y. & Xiao, R. (2013). A multi-dimensional contrastive study of English abstracts by native and non-native writers. *Corpora*, *8*(2), 209-234.

Carroll, D. (2008). *Psychology of language* (5th ed.). Belmont: Thomson Wadsworth.

Carston, R. (2005). Relevance Theory, Grice and the neo-Griceans: a response to Laurence Horn's 'Current issues in neo-Gricean pragmatics'. *Intercultural Pragmatics*, *2*(3), 303-319.

Chang, J. (2001). Chinese speakers. In M. Swan & B. Smith (Eds.), *Learner English: A teacher's guide to interference and other problems* (2nd ed., pp. 310-324). Cambridge: Cambridge University Press.

Chen, R. (2010). Compliment and compliment response research: A cross-cultural survey. In A. Trosborg (Ed.), *Pragmatics across languages and cultures* (pp. 79-101). Berlin: Walter de Gruyter.

Coe, N. (2001). Speakers of Spanish and Catalan. In M. Swan & B. Smith (Eds.), *Learner English: A teacher's guide to interference and other problems* (2nd ed., pp. 90-112). Cambridge: Cambridge University Press.

Cook, V. (2002). Background to the L2 user. In V. Cook (Ed.), *Portraits of the L2 user* (pp. 1-28). Clevedon: Multilingual Matters.

Corder, S. P. (1981). *Error analysis and interlanguage* (Vol. 112). Oxford: Oxford University Press.

Council of Europe (2001). *Common European Framework of Reference for Languages: Learning, teaching, assessment*. Cambridge: Cambridge University Press.

Crystal, D. (2012). *English as a global language*. Cambridge: Cambridge University Press.

De Swaan, A. (2001). *Words of the world: The global language system*. Cambridge: Polity Press.

Dewaele, J.-M. (2001). Activation or inhibition? The interaction of L1, L2 and L3 on the language mode continuum. In J. Cenoz, B. Hufeisen & U. Jessner (Eds.), *Cross-linguistic Influence in Third Language Acquisition: Psycholinguistic Perspectives* (pp. 69-89). Clevedon: Multilingual Matters.

Dewaele, J.-M. (2002). Variation, chaos et système en interlangue française. *Acquisition et interaction en langue étrangère*, *17*, 143-167.

Dewaele, J.-M. (2015). Why do so many bi-and multilinguals feel different when switching languages?. *International Journal of Multilingualism*, (ahead of print). doi: 10.1080/14790718.2015.1040406.

Dewaele, J.-M. & Wourm, N. (2002). L'acquisition de la compétence sociopragmatique en langue étrangère. *Revue française de linguistique appliquée 7*(2), 139-153.

Dörnyei, Z. & Scott, M. L. (1995). Communication strategies: What are they what are they not?. *Paper presented at the Annual Conference of the American Association for Applied Linguistics (AAAL)*. Long Beach, CA.

Dörnyei, Z. & Scott, M. L. (1997). Communication strategies in a second language: Definitions and taxonomies. *Language learning*, *47*(1), 173-210.

Ellis, R. (1994). *The study of second language acquisition*. Oxford: Oxford University Press.

Ernestus, M. & Warner, N. (2011). An introduction to reduced pronunciation variants. *Journal of Phonetics*, *39*, 253-260.

Ernestus, M., Hanique, I. & Verboom, E. (2015). The effect of speech situation on the occurrence of reduced word pronunciation variants. *Journal of Phonetics*, *48*, 60-75.

Eurobarometer (2012). Europeans and their Languages. *Special Eurobarometer 386*. http://ec.europa.eu/public_opinion/archives/ebs/ebs_386_en.pdf (accessed 26 June 2015). Brussels: European Commission.

Eysenck, M. W., Ellis, A. W., Hunt, E. B. & Johnson-Laird, P. N. E. (1994). *The Blackwell dictionary of cognitive psychology*. Oxford: Basil Blackwell.

Færch, C. and Kasper, G. (1983). Plans and Strategies in Foreign Language Communication. In C. Færch & G. Kasper (Eds.), *Strategies in interlanguage communication* (pp. 20-60). London: Longman.

Firth, A. (1996). The discursive accomplishment of normality: On 'lingua franca' English and conversation analysis. *Journal of pragmatics*, *26*(2), 237-259.

Firth, A. (2009). The *lingua franca* factor. *Intercultural Pragmatics*, *6*(2), 147-170.

Flemming, E. & Johnson, S. (2007). Rosa's roses: Reduced vowels in American English. *Journal of the International Phonetic Association*, *37*, 83-96.

Fox, J. & Weisberg, S. (2011). *An R Companion to Applied Regression* (2nd ed). Thousand Oaks CA: Sage.

Garcia, A. C. (2013). *Understanding Talk in Formal and Informal Settings*. London: Bloomsbury.

Geeslin, K. L. & Gudmestad, A. (2008). Comparing Interview and Written Elicitation Tasks in Native and Non-native Data: Do Speakers Do What We Think They Do?. In J. Bruhn de Garavito & E. Valenzuela (Eds.), *Selected Proceedings of the 10th Hispanic Linguistics Symposium*, (pp. 64-77). Somerville: Cascadilla.

Geeslin, K. L. & Long, A. Y. (2014). *Sociolinguistics and Second Language Acquisition: Learning to Use Language in Context*. New York: Routledge.

Gilquin, G., De Cock, S. & Granger, S. (2010). *The Louvain International Database of Spoken English Interlanguage* (Handbook and CD-ROM). Louvain-la-Neuve: Presses universitaires de Louvain.

Glenn, P. (2010). Interviewer laughs: Shared laughter and asymmetries in employment interviews. *Journal of Pragmatics*, *42*(6), 1485-1498.

Gnutzmann, C. (2000). Lingua franca. In M. Byram (Ed.), *Routledge encyclopedia of language teaching and learning*. (pp. 356-359). London: Routledge.

Götz, S. (2013). *Fluency in native and nonnative English speech*. Amsterdam: John Benjamins.

Granger, S. (2002). A bird's-eye view of learner corpus research. In S. Granger, J. Hung & S. Petch-Tyson (Eds.), *Computer Learner Corpora, Second Language Acquisition and Foreign Language Teaching* (pp. 3-33). Amsterdam: John Benjamins.

Granger, S. (2009). The contribution of learner corpora to second language acquisition and foreign language teaching. In K. Aijmer (Ed.), *Corpora and Language Teaching*, (pp. 13-32). Amsterdam: John Benjamins.

Granger, S., Dagneaux, E., Meunier, F. & Paquot, M. (2009). *The International Corpus of Learner English, Version 2* (Handbook and CD-ROM). Louvain-la-Neuve: Presses universitaires de Louvain.

Grice, H. P. (1975). Logic and conversation. In P. Cole & J. Morgan (Eds.), *Syntax and Semantics, 3: Speech Acts*. New York: Academic Press.

Gullberg, M. (1998). *Gesture as a communication strategy in second language discourse: A study of learners of French and Swedish*. Lund: Lund University Press.

Gullberg, M. (2008). Gestures and second language acquisition. In P. Robinson & N. C. Ellis (Eds.), *Handbook of cognitive linguistics and second language acquisition* (pp. 276-305). New York: Routledge.

Guy, G. R. (1991). Contextual conditioning in variable lexical phonology. *Language variation and change*, *3*, 223-239.

Haberland, H. (2011). Ownership and maintenance of a language in transnational use: Should we leave our lingua franca alone?. *Journal of Pragmatics*, *43*(4), 937-949.

Hanique, I., Ernestus, M. & Schuppler, B. (2013). Informal speech processes can be categorical in nature, even if they affect many different words. *The Journal of the Acoustical Society of America*, *133*, 1644-1655.

Hasselgren, A. (2002). Learner corpora and language testing: smallwords as markers of learner fluency. In S. Granger, J. Hung & S. Petch-Tyson (Eds.), *Computer Learner Corpora, Second Language Acquisition and Foreign Language Teaching* (pp. 143-174). Amsterdam: John Benjamins.

Hendriks, B. (2010). An experimental study of native speaker perceptions of non-native request modification in e-mails in English. *Intercultural Pragmatics*, *7*(2), 221-255.

Horn, L. (2005). Current issues in neo-Gricean pragmatics. *Intercultural Pragmatics*, *(2)*2, 191-204.

House, J. (2013). Developing pragmatic competence in English as a lingua franca: Using discourse markers to express (inter)subjectivity and connectivity. *Journal of Pragmatics*, *59*, 57-67.

Jenkins, J. (2000). *The phonology of English as an international language*. Oxford: Oxford University Press.

Jenkins, J., Cogo, A. & Dewey, M. (2011). Review of developments in research into English as a lingua franca. *Language Teaching*, *44*(3), 281-315.

Jenks, C. (2013). 'Your pronunciation and your accent is very excellent': orientations of identity during compliment sequences in English as a lingua franca encounters. *Language and Intercultural Communication*, *13*(2), 165-181.

Johnson, K. (2004). Massive reduction in conversational American English. In *Proceedings of the 10th international symposium on spontaneous speech: Data and analysis* (pp. 29-54). Tokyo, Japan.

Kachru, B. B. (1992). World Englishes: Approaches, issues and resources. *Language teaching*, *25*(1), 1-14.

Kecskes, I. & Papp, T. (2000). *Foreign language a mother tongue*. Mahwah: Lawrence Erlbaum Associates.

Kirkpatrick, A. (2010). Researching English as a lingua franca in Asia: The Asian Corpus of English (ACE) project. *Asian Englishes*, *13*(1), 4-18.

Kouwenhoven, H. & Van Mulken, M. (2012). The perception of self in L1 and L2 for Dutch-English compound bilinguals. In N. de Jong, K. Juffermans, M. Keijzer & L. Rasier (Eds.), *Papers of the Anéla 2012 Applied Linguistics Conference* (pp. 326-335). Delft: Uitgeverij Eburon.

Labov, W. (1972). *Sociolinguistic patterns*. Philadelphia: University of Pennsylvania Press.

Labov, W. (1966). *The social stratification of English in New York City*. Cambridge: Cambridge University Press.

Labov, W., Ash, S. & Boberg, C. (2005). The atlas of North American English: Phonetics, phonology and sound change. Walter de Gruyter. [http://www.atlas.mouton-content.com/]

Le Pair, R. (1996). Spanish request strategies: a cross-cultural analysis from an intercultural perspective. *Language Sciences*, *18*(3), 651-670.

Lee, D. Y. W. (2001). Genres, registers, text types, domains, and styles: clarifying the concepts and navigating a path through the BNC jungle. *Language Learning & Technology*, *5*(3), 37-72.

Lemhöfer, K. & Broersma, M. (2012). Introducing LexTALE: A quick and valid Lexical Test for Advanced Learners of English. *Behavior Research Methods*, *44*, 325-343.

Levelt, W. J. M. (1989). *Speaking: From intention to articulation*. Cambridge, MA: MIT Press

Levinson, S. C. (2000). *Presumptive meanings: The theory of generalized conversational implicature*. Cambridge, MA: MIT press.

Lindblom, B. (1983). Economy of speech gestures. In P. F. MacNeilage (Ed.), *The Production of Speech* (pp. 217-245). New York: Springer.

Lindblom, B. (1990). Explaining phonetic variation: A sketch of the H&H theory. In W. J. Hardcastle & A. Marchal (Eds.), *Speech production and speech modelling* (pp. 403-439). New York: Springer.

Losiewicz, B. L. (1992). *The effect of frequency on linguistic morphology*. Unpublished doctoral dissertation, University of Texas.

Louhiala-Salminen, L. & Kankaanranta, A. (2012). Language as an issue in international internal communication: English or local language? If English, what English?. *Public Relations Review*, *38*(2), 262-269.

MacWhinney, B. (2000). *The CHILDES Project: Tools for Analyzing Talk (3rd ed.)*. Mahwah: Lawrence Erlbaum Associates.

Mauranen, A. (2003). The Corpus of English as Lingua Franca in Academic Settings. *TESOL Quarterly*, *37*(3), 513-527.

Mauranen, A. (2006). Signaling and preventing misunderstanding in English as lingua franca communication. *International Journal of the Sociology of Language*, *177*, 123–150.

Mauranen, A. (2011). Learners and users – Who do we want corpus data from?. In F. Meunier, S. de Cock, G. Gilquin & M. Paquot (Eds.), *A taste for corpora. In honour of Sylviane Granger* (pp. 155-172). Amsterdam: John Benjamins.

Mauranen, A., Hynninen, N. & Ranta, E. (2010). English as an academic lingua franca: The ELFA project. *English for Specific Purposes*, *29*(3), 183-190.

Mitterer, H. & Ernestus, M. (2006). Listeners recover /t/s that speakers reduce: Evidence from /t/-lenition in Dutch. *Journal of Phonetics*, *34*, 73-103.

Mitterer, H. & Tuinman, A. (2012) The role of native-language knowledge in the perception of casual speech in a second language. *Frontiers in psychology*. doi: 10.3389/fpsyg.2012.00249.

Mitterer, H., Yoneyama, K. & Ernestus, M. (2008). How we hear what is hardly there: Mechanisms underlying compensation for /t/-reduction in speech comprehension. *Journal of Memory and Language*, *59*, 133-152.

Munro, M. J., Derwing, T. M. & Morton, S. L. (2006). The mutual intelligibility of L2 speech. *Studies in Second Language Acquisition*, *28*, 111-131.

Nakatani, Y. (2005). The Effects of Awareness-Raising Training on Oral communication strategy use. *The Modern Language Journal*, *89*(1), 76-91.

Olynyk, M., d'Anglejan, A. & Sankoff, D. (1987). A quantitative and qualitative analysis of speech markers in the native and second language speech of bilinguals. *Applied psycholinguistics*, *8*(2), 121-136.

Pavlenko, A. (2003), "I never knew I was a bilingual": reimagining teacher identities in TESOL. *Journal of Language, Identity, and Education*, *2*(4), 251-268.

Pitt, M. A. (2009). How are pronunciation variants of spoken words recognized? A test of generalization to newly learned words. *Journal of Memory and Language*, *61*, 19-36.

Pitt, M. A., Johnson, K., Hume, E., Kiesling, S. & Raymond, W. (2005). The Buckeye corpus of conversational speech: Labeling conventions and a test of transcriber reliability. *Speech Communication*, *45*, 89-95.

Pitt, M.A., Dilley, L., Johnson, K., Kiesling, S., Raymond, W., Hume, E. & Fosler-Lussier, E. (2007). *Buckeye Corpus of Conversational Speech* (2nd release) [www.buckeyecorpus.osu.edu]. Columbus, OH: Department of Psychology, Ohio State University (Distributor).

Plag, I., Homann, J. & Kunter, G. (2015). Homophony and morphology: The acoustics of word-final S in English. *Journal of Linguistics* (ahead of print). doi: 10.1017/S0022226715000183.

Pluymaekers, M., Ernestus, M. & Baayen, R. H. (2005). Articulatory planning is continuous and sensitive to informational redundancy. *Phonetica*, *62*, 146-159.

Pluymaekers, M., Ernestus, M. & Baayen, R. H. (2006). Effects of word frequency on the acoustic durations of affixes. *Proceedings of Interspeech 2006*, 953-956.

Poulisse, N. (1993). A theoretical account of lexical communication. In R. Schreuder & B. Weltens (Eds.), *The Bilingual Lexicon* (pp. 157-189). Amsterdam: John Benjamins.

Poulisse, N. & Schils, E. (1989). The Influence of Task-and Proficiency-Related Factors on the Use of Compensatory Strategies: A Quantitative Analysis. *Language Learning*, *39*(1), 15-46.

R Core Team (2014). *R: A language and environment for statistical computing* [http://www.R-project.org/]. Vienna: R Foundation for Statistical Computing.

Romero-Trillo, J. (2002). The pragmatic fossilization of discourse markers in non-native speakers of English. *Journal of pragmatics*, *34*(6). 769-784.

Schertz, J. & Ernestus, M. (2014). Variability in the pronunciation of non-native English the: Effects of frequency and disfluencies. *Corpus Linguistics and Linguistic Theory*, *10*, 329-345.

Schuppler, B., Ernestus, M., Scharenborg, O. & Boves, L. (2011). Acoustic reduction in conversational Dutch: A quantitative analysis based on automatically generated segmental transcriptions. *Journal of Phonetics*, *39*, 96-109.

Seidlhofer, B. (2001). Closing a conceptual gap: the case for a description of English as a lingua franca. *International Journal of Applied Linguistics*, *11*(2), 133-158.

Seidlhofer, B. (2004). Research perspectives on teaching English as a lingua franca. *Annual review of applied linguistics*, *24*, 209-239.

Seidlhofer, B. (2009). Accommodation and the idiom principle in English as a lingua franca. *Intercultural Pragmatics*, *6*(2), 195-215.

Seidlhofer, B. (2010). Giving VOICE to English as a Lingua Franca. In R. Facchinetti, D. Crystal & B. Seidlhofer (Eds.), *From International to Local English – and Back Again* (pp. 147-164). Bern: Peter Lang.

Seidlhofer, B., Breiteneder, A. & Pitzl, M. L. (2006). English as a lingua franca in Europe: Challenges for applied linguistics. *Annual Review of Applied Linguistics*, *26*, 3-34.

Selinker, L. (1972). Interlanguage. *International Review of Applied Linguistics*, *10*, 209-232.

Sjölander, K. (2001). Automatic alignment of phonetic segments. *Lund University, Department of Linguistics Working Papers*, *49*, 140-143.

Slepian, M. L., Ferber, S. N., Gold, J. M. & Rutchick, A. M. (2015). The Cognitive Consequences of Formal Clothing. *Social Psychological and Personality Science*, *6*(6), 661-668.

Spencer-Oatey, H. (2010). Intercultural competence and pragmatics research: examining the interface through studies of intercultural business discourse. In A. Trosborg (Ed.), *Pragmatics across languages and cultures* (pp. 189-216). Berlin: Walter de Gruyter.

Steen, G. (2011). Genre between the humanities and the sciences. In M. Callies, W. R. Keller & A. Löhofer (Eds.), *Bi-directionality in the cognitive sciences: avenues, challenges, and limitations* (pp. 21-42). Amsterdam: John Benjamins.

Stibbard, R. M. & Lee, J. I. (2006). Evidence against the mismatched interlanguage speech intelligibility benefit hypothesis. *The Journal of the Acoustical Society of America*, *120*, 433-442.

Sumner, M. & Samuel, A. G. (2005). Perception and representation of regular variation: The case of final /t/. *Journal of Memory and Language*, *52*, 322-338.

Suszczyńska, M. (1999). Apologizing in English, Polish and Hungarian: Different languages, different strategies. *Journal of Pragmatics*, *31*(8), 1053-1065.

Swan, M. (2012). ELF and EFL: are they really different?. *Journal of English as a Lingua Franca*, *1*(2), 379-389.

Sweeney, E. & Hua, Z. (2010). Accommodating Toward Your Audience. Do Native Speakers of English Know How to Accommodate Their Communication Strategies Toward Nonnative Speakers of English?. *Journal of Business Communication*, *47*(4), 477-504.

Tagliamonte, S. A. (2011). *Variationist sociolinguistics: change, observation, interpretation*. Malden: Wiley-Blackwell.

Tange, H. & Lauring, J. (2009). Language management and social interaction within the multilingual workplace. *Journal of Communication Management*, *13*(3), 218-232.

Tannen, D. (2005). *Conversational style: Analyzing talk among friends*. Oxford: Oxford University Press.

Thompson, G. L. & Brown, A. V. (2012). Interlanguage variation: The influence of monitoring and contextualization on L2 phonological production. *VIAL, Vigo International journal of Applied Linguistics*, *9*, 107-132.

Tops, G. A. J., Dekeyser, X., Devriendt, B. & Geukens, S. (2001). Dutch speakers. In M. Swan & B. Smith (Eds.), *Learner English: A teacher's guide to interference and other problems* (2nd ed., pp. 1-20). Cambridge: Cambridge University Press.

Torreira, F. & Ernestus, M. (2010). The Nijmegen corpus of casual Spanish. In N. Calzolari, K. Choukri, B. Maegaard, J. Mariani, J. Odijk, S. Piperidis, M. Rosner & D. Tapias (Eds.), *Proceedings of the Seventh conference on International Language Resources and Evaluation* (pp. 2981-2985). European Language Resources Association.

Torreira, F., Adda-Decker, M. & Ernestus, M. (2010). The Nijmegen corpus of casual French. *Speech Communication*, *52*(3), 201-212.

Van de Haak, M., De Jong, M. & Schellens, P. J. (2003). Hardopdenkprotocollen als pretestmethode: synchroon en retrospectief hardopdenken vergeleken. *Tijdschrift voor Taalbeheersing*, *25*(3), 236-252.

Van Herk, G. (2012). *What is sociolinguistics?*. Hoboken: Whiley-Blackwell.

Van Mulken, M. & Hendriks, B. (2015). Your language or mine? or English as a lingua franca? Comparing effectiveness in English as a lingua franca and L1–L2 interactions: implications for corporate language policies. *Journal of Multilingual and Multicultural Development*, *36*(4), 404-422.

Vorstermans, A., Martens, J. P. & Van Coile, B. (1996). Automatic segmentation and labelling of multi-lingual speech data. *Speech Communication*, *19*, 271-293.

Wagner, P., Malisz, Z. & Kopp, S. (2014). Gesture and speech in interaction: an overview. *Speech Communication*, *57*, 209-232.

Wagner, P., Trouvain, J. & Zimmerer, F. (2015). In defense of stylistic diversity in speech research. *Journal of Phonetics*, *48*, 1-12.

Warner, N. & Tucker, B. V. (2011). Phonetic variability of stops and flaps in spontaneous and careful speech. *The Journal of the Acoustical Society of America*, *130*, 1606-1617.

Weber, A., Di Betta, A. M. & McQueen, J. M. (2014). Treack or trit: Adaptation to genuine and arbitrary foreign accents by monolingual and bilingual listeners. *Journal of phonetics*, *46*, 34-51.

Westin, I. (2002). *Language change in English newspaper editorials.* Amsterdam: Rodopi.

Wurm, L. H. & Fisicaro, S. A. (2014). What residualizing predictors in regression analyses does (and what it does *not* do). *Journal of Memory and Language*, *72*, 37-48.

Xiao, R. (2009). Multidimensional analysis and the study of World Englishes. *World Englishes*, *28*, 421-450.

Young, S., Evermann, G., Gales, M., Hain, T., Kershaw, D., Liu, X. A., Moore, G., Odell, J., Ollason, D., Povey, D., Valtchev, V. & Woodland, P. (2006). *The HTK book* (for HTK version 3.4). Cambridge: Cambridge University Engineering Department.

Yule, G. (1996). *Pragmatics*. Oxford: Oxford University Press.

Nederlandse samenvatting

Als mensen met elkaar willen communiceren, maar elkaars taal niet spreken, gebruiken zij vaak Engels (zie bijvoorbeeld De Swaan, 2001; Crystal, 2012; Seidlhofer, 2001, 2004). Engels is dan een *lingua franca*: een voor beide sprekers vreemde taal die dient als communicatiemedium (zie bijvoorbeeld Firth, 1996; Gnutzmann, 2000).

Engels wordt in allerlei situaties als lingua franca gebruikt. Denk bijvoorbeeld aan vluchtige, informele gesprekken tussen marktkooplui en toeristen, maar ook aan ingewikkelde, formele onderhandelingen tussen zakenmensen.

Als we onze moedertaal spreken, passen we ons taalgebruik aan de situatie aan (zie bijvoorbeeld Biber, 1988; Biber & Conrad, 2009; Van Herk, 2012). Zo praten we anders met onze baas dan met onze vrienden, en spreekt een journaallezer anders op TV dan thuis. Of dit ook zo is als we een andere taal dan onze moedertaal gebruiken, is minder bekend.

Nijmegen Corpus of Spanish English

In mijn proefschrift heb ik situationele variatie door niet-moedertaalsprekers onderzocht. Ik heb een corpus ontwikkeld met daarin opnames van gesprekken tussen Spaanse en Nederlandse sprekers van het Engels: het *Nijmegen Corpus of Spanish English*. Voor de opnames van het corpus heb ik twee Nederlanders meegenomen naar Madrid. Zij hadden ervaring met improvisatietheater en konden zich daardoor goed inleven in een informele en een formele spraaksituatie. Vierendertig Spaanse sprekers kwamen één voor één langs en hadden dan eerst een informeel gesprek met één van de Nederlanders die zich voordeed als een andere, gewone deelnemer aan het project. Vervolgens werd iedere Spaanse spreker in een formele setting geïnterviewd door de andere Nederlandse spreker. Deze werd voorgesteld als een masterstudent journalistiek die bezig was met een afstudeerproject waarin Spaanse

jongeren en politici zouden worden ondervraagd over de Spaanse economische crisis en andere politiek georienteerde onderwerpen.

Alle gesprekken zijn woord voor woord uitgeschreven. Deze transcripties vormden samen met de geluidsopnames de basis voor de studies in de drie hoofdstukken van mijn proefschrift. Ik keek steeds uitsluitend naar de Spaanse sprekers, omdat van de Nederlandse sprekers kan worden gezegd dat ze niet helemaal onwetend waren over mijn onderzoek. Elk van de hoofdstukken onderzocht een ander taalniveau om te weten te komen of er sprake was van sitationele variatie.

Situationele variatie op drie taalniveaus

In hoofdstuk 2 heb ik eerst drie fenomenen onderzocht waarvan uit eerder onderzoek is gebleken dat ze kenmerkend zijn voor informele spraak. Ze waren dit ook in mijn corpus. De Spaanse sprekers lachten bijna vijf keer zo vaak (zie ook Garcia, 2010; Glenn, 2010), overlapten bijna vijf keer zo veel met hun Nederlandse gesprekspartner door al te beginnen met praten terwijl de Nederlander nog niet klaar was (zie ook Tannen, 2005) en gebruikten ongeveer drie keer zo veel Spaanse woorden in hun Engels (zie ook Dewaele, 2001) tijdens de informele gesprekken als tijdens de formele interviews.

Daarnaast heb ik onderzocht of er verschil zat in hoe vaak bepaalde woordtypen (bijvoorbeeld zelfstandige naamwoorden en werkwoorden in de tegenwoordige tijd) en zinsconstructies (zoals “het witte huis” en “het huis is wit”) werden gebruikt in de informele gesprekken en de formele interviews. Deze woordtypen en zinsconstructies kwamen uit eerder werk van Biber en collega’s (1988; Biber & Conrad, 2009). Zij hebben keer op keer aangetoond dat de voornaamste dimensie waarop teksten (ook mondelinge) ten opzichte van elkaar kunnen worden gepositioneerd wordt bepaald door de mate waarin ze informatief of juist affectief zijn (hun *informative vs. involved* dimensie). Academische teksten staan

bijvoorbeeld aan de 'informatieve' zijde van het spectrum, omdat er in weinig woorden veel informatie wordt gecommuniceerd, terwijl informele gesprekken aan de 'affectieve' zijde staan, omdat ze meer gericht zijn op het hebben van contact, en veel minder op het bondig communiceren van informatie.

Zoals verwacht gebruikten de Spaanse sprekers vaker woorden en constructies die geschikt zijn om informatie bondig te presenteren tijdens het formele interview dan tijdens het informele gesprek. Wel gedroegen de Spanjaarden zich soms anders dan de moedertaal Engelssprekers die Biber en collega's hadden onderzocht. Dit kan worden verklaard door invloeden vanuit hun moedertaal (zie Biber, Davies, Jones & Tracy-Ventura, 2006): wat in het Spaans kenmerkend is voor politiek getinte interviews, zoals een hogere mate van onzekerheid uitdrukken in taal, werd door deze sprekers ook in het Engels gedaan.

Hoofdstuk 3 gaat over de oplossingen die mensen bedenken wanneer er communicatiemoeilijkheden ontstaan, bijvoorbeeld als ze zelf even niet meer op een woord kunnen komen, hun gesprekspartner even niet begrijpen, of wanneer ze denken dat bepaalde woorden of constructies problematisch kunnen zijn voor hun gesprekspartner. Op zo'n moment gebruiken sprekers deze woorden of constructies niet, maar kiezen ze voor een communicatiestrategie die ongeveer dezelfde boodschap overbrengt, maar dan met andere woorden. De Spaanse sprekers kozen vrijwel nooit voor strategieën waarbij ze de hulp van hun gesprekspartner nodig hadden, maar probeerden zulk soort problemen zelf op te lossen. Dit deden ze dan bijvoorbeeld door het Spaanse woord te gebruiken (*manzana* voor het Engelse *apple*) of een omschrijving te geven (*that red, green or yellow round fruit*). Het bleek dat de Spaanse sprekers rekening hielden met de situatie en meer informatieve strategieën gebruikten tijdens het formele interview, waarin het belangrijk was om de inhoud van de boodschap correct te communiceren, dan tijdens het informele gesprek, waarin het er vooral ging om gezellig te praten. Zo gebruikten ze in het informele gesprek meer Spaanse

woorden in dan tijdens het formele interview, maar deden ze tijdens die interviews meer moeite en "verengelsten" ze het Spaanse woord vaker. In het voorbeeld van de appel zou zoiets als *manzane* (spreek uit "menzeen") kunnen worden gebruikt.

In hoofdstuk 4 heb ik gekeken naar de uitspraak van de woorden *can* en *can't*, met de nadruk op de '*t*' aan het einde van *can't*, omdat meerdere medeklinkers aan het einde van een woord vaak moeilijk zijn uit te spreken voor Spaanse gebruikers van het Engels (zie bijvoorbeeld Coe, 2001). Om vast te stellen of het echt zo is dat Spaanse sprekers van het Engels de '*t*' relatief vaak weglaten heb ik eerst de Spaanse sprekers uit mijn corpus met Amerikaanse moedertaalsprekers van het Engels vergeleken. Mijn resultaten laten zien dat Spaanse sprekers de '*t*' vaker weglieten dan Amerikaanse sprekers van het Engels. Vervolgens heb ik onderzocht of de '*t*' vaker afwezig is in informele dan in formele Spaans-Engelse spraak. Dit was inderdaad het geval.

Toen ik ging kijken naar wat er dan overblijft als de '*t*' afwezig is, bleek dat de Amerikaanse gereduceerde vorm van *can't* (dus zonder '*t*') heel sterk leek op *can't* met '*t*', maar dat de Spaanse gereduceerde vorm veel minder duidelijk leek op *can't*, en zelfs grote gelijkenissen vertoonde met *can*: de woorden en de klinker '*a*' duurden even lang. Kortom, een Spaanse spreker van het Engels die de '*t*' in *can't* niet uitspreekt, loopt het risico dat een luisteraar precies het tegenovergestelde hoort van wat er bedoeld wordt.

In een experiment met Canadese (moedertaal Engels), Nederlandse, Spaanse en Chinese luisteraars bleek dat elk van deze groepen de Spaanse gereduceerde vorm van *can't* erg vaak als *can* hoorden, namelijk in meer dan de helft van de gevallen. De Amerikaanse gereduceerde vorm van *can't* was wel relatief duidelijk voor de Canadese en Nederlandse luisteraars, maar niet voor de Spaanse en Chinese luisteraars. Wellicht waren deze laatsten minder gevoelig voor de variatie in de Amerikaanse *can* en *can't*, mogelijk doordat in het

Spaans en het (Mandarijn-)Chinees weinig variatie bestaat in de lengte van klinkers, waardoor deze luisteraars het verschil ook in het Engels minder goed konden horen.

Formele spraak meer informatief

De belangrijkste conclusie op basis van de drie studies samen is dat formele spraak meer informatief is dan informele spraak en dat dit geldt voor alle drie de taalniveaus die ik heb onderzocht. In verschillende wetenschapsgebieden (voor de fonetiek, zie bijvoorbeeld Lindblom, 1983, 1990; voor de pragmatiek zie bijvoorbeeld Horn, 2005) is eerder al geopperd dat er een soort continuum bestaat dat loopt van relatief economisch, maar mogelijk ook minder informatief taalgebruik naar relatief inspannend, maar daardoor mogelijk ook meer informatief taalgebruik.

Mijn proefschrift laat zien dat er een algemeen continuum waarneembaar is, dat loopt van economisch tot informatief taalgebruik, op verschillende taalniveaus tegelijk, en ook bij niet-moedertaal sprekers. De sprekers deden tijdens de formele interviews meer moeite dan tijdens de informele gesprekken om hun boodschap bondig te formuleren (Hoofdstuk 2), communicatiestrategieën te gebruiken die informatiever zijn (Hoofdstuk 3) en *can't* netjes met '*t*' uit te spreken (Hoofdstuk 4). Met andere woorden, net als moedertaalsprekers passen niet-moedertaalgebruikers zich aan de situatie aan en is hun taalgebruik bijvoorbeeld anders in een luchtig, informeel gesprek, dan tijdens een formeel interview.

Acknowledgments

Geheel in lijn met de plaats die het Engels in onze hedendaagse wereld inneemt, zal ik in mijn dankwoord verderop even *switchen* naar het Engels, wanneer ik me wend tot niet-Nederlandstalige lezers. Ook de titel van dit dankwoord heb ik maar Engels gelaten, zodat zij weten waar ze moeten zoeken. Ik begin echter in het Nederlands.

Allereerst wil ik namelijk mijn begeleiders bedanken. Margot, toen ik een advertentie zag voor een PhD-positie in Tilburg en aan jou vroeg of je dacht dat die bij me zou passen, aarzelde je niet om me te laten weten dat er misschien ook wel wat mogelijk was in Nijmegen. Je vertrouwen deed me goed. Mirjam, jij ging mee in dat vertrouwen, nadat we kort kennis hadden gemaakt. Jullie vertrouwen heb ik vervolgens drieënhalf jaar gevoeld, wat me heeft gesterkt tijdens het werken aan mijn proefschrift. Bedankt!

Then, my studies have benefited greatly from the help of a number of scholars abroad. First, I would like to thank José Manuel Pardo for his hospitality and for allowing me to work in his laboratory in Madrid on two occasions. Also, many thanks to Juan, Syaheerah and in particular Julian for helping me out during my stays in Madrid and for making me feel at ease. Secondly, I would like to thank Benjamin Tucker and his colleagues for having run my *can-can't* experiment with Canadian and Mandarin-Chinese listeners in Edmonton.

Een aantal studentassistenten zijn heel belangrijk geweest voor mijn project. Om te beginnen wil ik meesteracteurs Eelke en Rik bedanken. Samen met jullie heb ik in Madrid twee geweldige weken gehad. We hebben hard gewerkt, maar nog veel harder gelachen. Daarnaast wil ik Marloes, Niels en met name Esther bedanken. Jullie hebben me veel transcriptiewerk uit handen genomen en ik kan zeker zeggen dat zonder jullie hulp ik dit stukje (nog) niet had kunnen schrijven. Een speciaal dank wil ik ook richten aan Tijl. Jouw lessen Python hebben een wereld voor me geopend. Je was er altijd als ik nog vragen had en

je duidelijke uitleg heeft me veel geholpen om later zelf de scripts te schrijven die ik nodig had. Tenslotte wil ik alle andere (huidige en vroegere) studentassistenten van de Speech Comprehension groep hier bedanken. Sommigen van jullie heb ik in kleine, geluidsdichte hokjes opgesloten, al dan niet samen met Spanjaarden, om mijn ideeën voor de opnames te pretesten, anderen hebben achter de computer de meest eentonige taakjes voor me uitgevoerd. Heel veel dank daarvoor!

Toen ik op het MPI binnenkwam, mocht ik een kantoor delen met Arina. Ik wil jou bedanken voor de eerste maanden, waarin ik mijn verbazing – en soms verontwaardiging – over de wereld waarin ik was terechtgekomen met je kon delen. Na Arina's promotie werd het een beestenboel in een veel te klein en te warm kamertje. Dank aan superdieren Sophie en Xaver, die inmiddels verder zijn getrokken naar een ander hokje, en aan Martijn die later pas kwam snuffelen, voor de gezelligheid en jullie hulp.

Annika, met jou samen heb ik de hitte en het ruimtegebrek het langst weerstaan. Daardoor was het een stuk beter te doen. Onze gesprekken over het werk, maar vooral ook over andere zaken hebben de tijd veel aangenamer gemaakt! Ik ben blij dat ik bijna drie jaar een kantoor met je heb mogen delen. Nog blijer ben ik dat je paranimf wil zijn bij mijn promotie, zodat we de tijd nog een beetje kunnen rekken.

David, zo'n tien jaar geleden kwamen we tegelijk in Nijmegen terecht om te gaan studeren. Via omwegen die we toen nog niet hadden kunnen voorzien, kwamen we uiteindelijk opnieuw in Nijmegen terecht, als promovendi. Toen jij post-doc werd en een kamer kreeg in het MPI kon ik dagelijks even langslopen. Dat zal ik missen! Dat je mee kwam trainen voor jouw tweede en mijn eerste 4Daagse vind ik echt geweldig. Daarmee vergeleken is promoveren trouwens een eitje.

Aan alle leden van de Speech Comprehension group die ik nog niet heb genoemd, nee ik ben jullie niet vergeten. Voel je alsjeblieft zeer aangesproken als ik zeg: dank jullie wel voor de gezelligheid en voor de tijd die jullie vrijmaakten als ik vragen kwam stellen of feedback nodig had. Ook de leden van de Non-nativeness in Communication groep wil ik bedanken voor jullie hulp en de gezellige lunchmeetings.

Mede PhD-studenten van CIW, jullie 'ontdekte' ik pas vrij laat, maar gelukkig niet te laat. De verscheidenheid aan personen, disciplines en onderwerpen die wij vertegenwoordigen zorgden voor interessante en gezellige meetings met aansluitende borrels. Ook bij jullie kon ik altijd terecht voor werkgerelateerde vragen, maar ook voor heel andere dingen. Dank jullie wel!

A big thank you to my UniVV fellow team members. De sterke behoefte die ik had om in Nijmegen een leuke groep mensen om me heen te hebben kon niet beter worden ingevuld dan door jullie. De Champions League hebben we helaas niet gehaald, maar ik heb veel gehad aan de trainingen, wedstrijden en andere uitjes om mijn gedachten te verzetten. Ook veel dank aan Falco, Frank, Rudolf en Sander. Ik ken jullie al uit de tijd toen alles nog een stuk eenvoudiger was, en het was fijn om die tijden af en toe voor even te doen herleven.

Papa, mama, Kirsten en Esther, wat fijn dat jullie er altijd zijn. Soms gebruiken we niet veel woorden, maar dat er maar weinig nodig zijn, is juist zo bijzonder. Rob, Tina, Nick en Judith, het is een luxe om bij nog zo'n mooi gezin te horen. Dank jullie allemaal.

Mandy, jij maakt alles mooier. Reizen met jou is één groot feest, en ik kan blind op je vertrouwen. De reis die mijn promotie was, had ik zonder jou niet kunnen maken. Als ik even niet wist hoe ik verder moest, gidste je me naar het juiste pad, of zorgde je voor een leuke omweg ter afleiding. Je was altijd trots op me, vaak meer nog dan ikzelf. Te weten dat jij het goed vindt, is eigenlijk genoeg. Ik heb zin om verder te reizen, nieuwe horizons tegemoet.

Curriculum vitae

Huib Kouwenhoven (Zwolle, 21 July 1986) obtained his BA in Communication and Information Studies from Radboud University in 2008, his MA in *Plurilinguisme européen et Interculturalité* from the University of Strasbourg (France) in 2010, and his MA in International Business Communication from Radboud University in 2011. Huib worked as a Corporate Marketing and Communications advisor at KEMA, before he started his PhD at the department of Communication and Information Studies at Radboud University in 2012. He is currently working as a Business Consultant at Quintiq in ‘s Hertogenbosch.

MPI series in psycholinguistics

1. Miranda van Turennout
   The electrophysiology of speaking: Investigations on the time course of semantic, syntactic, and phonological processing
2. Niels O. Schiller
   The role of the syllable in speech production: Evidence from lexical statistics, metalinguistics, masked priming, and electromagnetic midsagittal articulography
3. Bernadette M. Schmitt
   Lexical access in the production of ellipsis and pronouns
4. Alette P. Haveman
   The open-/closed-class distinction in spoken-word recognition
5. Kay Behnke
   The acquisition of phonetic categories in young infants: A self-organising artificial neural network approach
6. Jan-Peter de Ruiter
   Gesture and speech production
7. Esther Grabe
   Comparative intonational phonology: English and German
8. Ingeborg Lasser
   Finiteness in adult and child German
9. Joost van de Weijer
   Language input for word discovery
10. James Essegbey
    Inherent complement verbs revisited: Towards an understanding of argument structure in Ewe
11. Dirk J. Janssen
    Producing past and plural inflections
12. Anna Margetts
    Valence and transitivity in Saliba: An Oceanic language of Papua New Guinea
13. Arie H. van der Lugt
    From speech to words
14. Eva Schultze-Berndt
    Simple and complex verbs in Jaminjung: A study of event categorisation in an Australian language
15. Irene Krämer
    Interpreting indefinites: An experimental study of children's language comprehension
16. Andrea C. Weber
    Language-specific listening: The case of phonetic sequences
17. Femke F. van der Meulen
    Moving eyes and naming objects
18. Andrea Krott
    Analogy in morphology: The selection of linking elements in Dutch compounds

19. Kerstin Mauth
Morphology in speech comprehension

20. Nivja H. de Jong
Morphological families in the mental lexicon

21. Simone A. Sprenger
Fixed expressions and the production of idioms

22. Birgit Hellwig
The grammatical coding of postural semantics in Goemai (a West Chadic language of Nigeria)

23. Fermín Moscoso del Prado Martín
Paradigmatic structures in morphological processing: Computational and cross-linguistic experimental studies

24. Daniëlle van den Brink
Contextual influences on spoken-word processing: An electro-physiological approach

25. Petra M. van Alphen
Perceptual relevance of prevoicing in Dutch

26. Joana Cholin
Syllables in speech production: Effects of syllable preparation and syllable frequency

27. Marjolein H. W. Meeuwissen
Producing complex spoken numerals for time and space

28. Rachèl J. J. K. Kemps
Morphology in auditory lexical processing: Sensitivity to fine phonetic detail and insensitivity to suffix reduction

29. Barbara Schmiedtová
At the same time...: The expression of simultaneity in learner varieties

30. Friederike Lüpke
A grammar of Jalonke argument structure

31. Marlies Wassenaar
Agrammatic comprehension: An electrophysiological approach

32. Frank Seifart
The structure and use of shape-based noun classes in Miraña (North West Amazon)

33. Anne Pier Salverda
Prosodically-conditioned detail in the recognition of spoken words

34. Mirjam Broersma
Phonetic and lexical processing in a second language

35. Oliver Müller
Retrieving semantic and syntactic word properties

36. Frank Eisner
Lexically-guided perceptual learning in speech processing

37. Keren B. Shatzman
Sensitivity to detailed acoustic information in word recognition

38. Rebecca Özdemir
The relationship between spoken word production and comprehension

39. Mandana Seyfeddinipur
Disfluency: Interrupting speech and gesture

40. Christiane Dietrich
The acquisition of phonological structure: Distinguishing contrastive from noncontrastive variation

41. Daniel B.M. Haun
Cognitive cladistics and the relativity of spatial cognition

42. Martijn Goudbeek
The acquisition of auditory categories

43. Mark Pluymaekers
Affix reduction in spoken Dutch

44. Valesca Kooijman
Continuous-speech segmentation at the beginning of language acquisition: Electrophysiological evidence

45. Pamela Perniss
Space and iconicity in German Sign Language (DGS)

46. Heidrun Bien
On the production of morphologically complex words with special attention to effects of frequency

47. Amanda Brown
Crosslinguistic influence in first and second languages: Convergence in speech and gesture

48. Jidong Chen
The acquisition of verb compounding in Mandarin Chinese

49. Anita Wagner
Phoneme inventories and patterns of speech sound perception

50. Victor Kuperman
Lexical processing of morphologically complex words: An information-theoretical perspective

51. Claudia Wegener
A grammar of Savosavo, a Papuan language of the Solomon Islands

52. Claudia Kuzla
Prosodic structure in speech production and perception

53. Sarah Schimke
The acquisition of finiteness by Turkish learners of German and Turkish learners of French: Investigating knowledge of forms and functions in production and comprehension

54. Laura de Ruiter
Studies on intonation and information structure in child and adult German

55. Eva Reinisch
Processing the fine temporal structure of spoken words

56. Wieke Tabak
Semantics and (ir)regular inflection in morphological processing

57. Susanne Brouwer
Processing strongly reduced forms in casual speech

58. Miriam Ellert
Ambiguous pronoun resolution in L1 and L2 German and Dutch

59. Ian FitzPatrick
Lexical interactions in non-native speech comprehension: Evidence from electro-encephalography, eye-tracking, and functional magnetic resonance imaging

60. Annelie Tuinman
Processing casual speech in native and non-native language

61. Stuart Robinson
Split intransitivity in Rotokas, a Papuan language of Bougainville

62. Sonja Gipper
Evidentiality and intersubjectivity in Yurakaré: An interactional account

63. Lin Wang
The influence of information structure on language comprehension: A neurocognitive perspective

64. Mark Dingemanse
The meaning and use of ideophones in Siwu

65. Marco van de Ven
The role of acoustic detail and context in the comprehension of reduced pronunciation variants

66. Francisco Torreira
Speech reduction in spontaneous French and Spanish

67. Caroline Junge
The relevance of early word recognition: Insights from the infant brain

68. Matthias J. Sjerps
Adjusting to different speakers: Extrinsic normalization in vowel perception

69. Katrien R. Segaert
Structuring language : contributions to the neurocognition of syntax

70. Birgit Knudsen
Infants' appreciation of others' mental states in prelinguistic communication: a second person approach to mindreading

71. Federico Rossano
Gaze behavior in face-to-face interaction

72. Connie de Vos
Sign-spatiality in Kata Kolok: how a village sign language of Bali inscribes its signing space

73. Attila Andics
Who is talking? Behavioural and neural evidence for norm-based coding in voice identity learning

74. Marijt Witteman
Lexical processing of foreign-accented speech: Rapid and flexible adaptation

75. Daniel Puccini
The use of deictic versus representational gestures in infancy

76. Kaoru Hayano
Territories of knowledge in Japanese conversation

77. Kimberley Mulder
Family and neighbourhood relations in the mental lexicon: A cross-language perspective

78. Zeshu Shao
Contributions of executive control to individual differences in word production

79. Patrick van der Zande
Hearing speech and seeing speech: Perceptual adjustments in auditory-visual processing

80. Sarah Dolscheid
High pitches and thick voices: The role of language in space-pitch associations

81. Joost Rommers
Seeing what's next: Processing and anticipating language referring to objects

82. Iris Hanique
Mental representation and processing of reduced words in casual speech

83. Katja Poellmann
The many ways listeners adapt to reductions in casual speech

84. Giuseppina Turco
Contrasting opposite polarity in Germanic and Romance languages: Verum focus and affirmative particles in native speakers and advanced L2 learners

85. Jana Reifegerste
Morphological processing in younger and older people: Evidence for flexible dual-route access

86. Alma Veenstra
Semantic and syntactic constraints on the production of subject-verb agreement

87. Helen Buckler
The acquisition of morphophonological alternations across languages

88. Annemarie Verkerk
The evolutionary dynamics of motion event encoding

89. Jiyoun Choi
Rediscovering a forgotten language

90. Sho Tsuji
The road to native listening: Language-general perception, language-specific input

91. Gudmundur Bjarki Thorgrímsson
Infants' understanding of communication as participants and observers

92. Saskia van Putten
Information structure in Avatime

93. Jeremy Hammond
Switch Reference in Whitesands

94. Binyam Gebrekidan Gebre
Machine learning for gesture recognition from videos

95. Beyza Sumer
Acquisition of spatial language by signing and speaking children: a comparison of Turkish sign language (TID) and Turkish

96. Salomi Savvatia Asaridou
An ear for pitch: on the effects of experience and aptitude in processing pitch in language and music

97. Maartje van de Velde
lncrementality and Flexibility in Sentence Production

98. Edwin van Leeuwen
Social learning dynamics in chimpanzees: Reflections on (nonhuman) animal culture

99. Giovanni Rossi
The request system in Italian interaction

100. Lilla Magyari
Timing turns in conversation: A temporal preparation account

101. Wencui Zhou
Assessing birth language memory in young adoptees

102. David Peeters
A social and neurobiological approach to pointing in speech and gesture

103. Alessandro Gialluisi
Investigating the genetic basis of reading and language skills

104. Rósa Signý Gisladottir
Conversation Electrified: The Electrophysiology of Spoken Speech Act Recognition

105. Alastair Charles Smith
Modelling Multimodal Language Processing

106. Florian Hintz
Predicting language in different contexts: The nature and limits of mechanisms in anticipatory language processing