What's in a dialogue?

On the dynamics of meaning-making in English conversation

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Spoken dialogue is the most common use of language, but it is also incredibly complex and dynamic. It puts on full display the intricate ways in which speakers coordinate their contributions to make sense of the world and negotiate social relations with each other. A fruitful method for studying spoken dialogue is to consult language corpora based on spoken, conversational data. However, the shortage of such corpora has long been an obstacle. This thesis provides a novel and empirically grounded account of the dynamic negotiation of meaning in spoken dialogue including the constructional properties and socio-cognitive processes that play a role. It also reports on the compilation of a new corpus of spoken English, the London–Lund Corpus 2, which together with the first London–Lund Corpus forms the basis of the investigations carried out in the thesis.

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DOCTORAL DISSERTATION

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Abstract
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The first article focuses on a very common construction in English, namely *I think* COMPLEMENT and the family of complement-taking predicate constructions. It questions the rigid treatment of the constructions in APPRAISAL theory as always having the same dialogic meaning. For example, *I think* is considered to always open up the space for dialogic alternatives. By combining data from the London–Lund Corpus 1 with a laboratory experiment, we show that *I think* COMPLEMENT serves not only to expand the dialogic space, but it may also close it down. The factors that influence the dialogic meaning of the construction are not only semantic but also prosodic, collocational and social.

The second article draws on data from the London–Lund Corpus 2 to shed new light on the interaction of intersubjective processes and priming mechanisms in dialogic resonance, which emerges when speakers reproduce constructions from prior turns. It does so by investigating the intersubjective functions that resonance has in discourse and the time it takes for speakers to resonate with each other. The results show that resonance is often used to express divergent views, which are produced very quickly. We argue that, while priming reduces the gap between speaker turns, intersubjective processes give the speakers the motivation to respond early. This is due to the increased sense of interpersonal solidarity that resonance is assumed to evoke.

The third and the fourth articles are both concerned with the reactive *what-x* construction, which has not received any attention in the literature so far. The aim of the third article is to define and describe the constructional properties of the construction based on data from the London–Lund Corpus 2. The constructional representation includes not only lexical–semantic information but also essential dialogic and prosodic information, which are mostly missing in Construction Grammar. The fourth article combines data from the London–Lund Corpora to demonstrate the complex interplay between social motivations and cognitive mechanisms in the diachronic development of constructions in spoken dialogue. It shows that the development of the reactive *what-x* construction is triggered by the pragmatic strengthening of discourse-structuring and turn-taking inferences, and proceeds through metonymic micro-adjustments of the conceptual structure of the construction itself.

In sum, the thesis provides a systematic and empirically grounded account of the dynamic negotiation of meaning in spoken dialogue. It contributes new knowledge to our understanding of the broad and interactive nature of constructional meaning and the complex interaction of underlying socio-cognitive processes. The compilation of the London–Lund Corpus 2 will facilitate many more investigations of this kind.

Key words: spoken dialogue, constructions, stance-taking, intersubjectivity, engagement, prosody, language change, Cognitive-Functional Linguistics, corpus linguistics, London–Lund Corpus 2, reliability, experimentation

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Life is divided up into phases.
Each one is very different from the others, and you have to be able to recognise what is expected of you in each phase.

Kurt Vonnegut Jr.

Contents

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Thanks to the generous financial support of the Olof Sager Foundation and the Birgit Rausing Language Programme, I was able to pay several visits to the Survey of English Usage at University College London and the ESRC Centre for Corpus Approaches to Social Science at Lancaster University to collect data for the London–Lund Corpus 2. I am grateful to the people I met there for providing me with much needed assistance in carrying out the recordings. I would particularly like to thank Rachele De Felice who not only helped me immensely with the corpus, but also became a good friend. Many thanks also to the Humanities Lab at Lund University for providing me with the necessary equipment and resources.

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To you, Magnus, I owe most of all. Thank you for being my biggest fan, my safe place to land at the end of a long day, and for standing by my side through it all. It is not a coincidence that the quote at the beginning of the thesis is by one of your favourite authors, Kurt Vonnegut Jr., and it is not a coincidence that it is incomplete: "Life is divided up into phases. Each one is very different from the others, and you have to be able to recognise what is expected of you in each phase. That's the secret of successful living". I know that this phase of my life was successful, because I recognised not only what is expected of me professionally, but also that I am supposed to spend the rest of my life with you. So it goes.

Abstract

This thesis is concerned with spoken dialogue and the dynamic negotiation of meaning in English conversation. It serves two aims, one theoretical and the other practical. The theoretical aim is to further our understanding of the kinds of properties that influence the meaning of constructions in spoken dialogue and the role of underlying socio-cognitive processes. The practical aim is to compile a new corpus of spoken British English, the London–Lund Corpus 2, modelled on the same principles as the first London–Lund Corpus from 50 years prior. The aims are addressed in the four articles included in the thesis.

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The third and the fourth articles are both concerned with the reactive *what-x* construction, which has not received any attention in the literature so far. The aim of the third article is to define and describe the constructional properties of the construction based on data from the London–Lund Corpus 2. The constructional representation includes not only lexical–semantic information but also essential dialogic and prosodic information, which are mostly missing in Construction Grammar. The fourth article combines data from the London–Lund Corpora to demonstrate the complex interplay between social motivations and cognitive mechanisms in the diachronic development of constructions in spoken dialogue. It shows that the development of the reactive *what-x* construction is triggered by the pragmatic strengthening of discourse-structuring and turn-taking inferences, and

proceeds through metonymic micro-adjustments of the conceptual structure of the construction itself.

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List of original articles

This thesis is based on the following articles, which are referred to in the text by their Arabic numerals.

1. **Põldvere, N.**, Fuoli, M., and Paradis, C. (2016). A study of dialogic expansion and contraction in spoken discourse using corpus and experimental techniques. *Corpora*, *11*(2), 191–225.

2. **Põldvere, N.**, Johansson, V., and Paradis, C. (under review). The intersubjective processes and cognitive mechanisms of dialogic resonance in everyday conversation.

3. **Põldvere, N.**, and Paradis, C. (2019a). 'What and then a little robot brings it to you?' The reactive *what-x* construction in spoken dialogue. *English Language and Linguistics*. Advance online publication. doi:10.1017/S1360674319000091

4. **Põldvere, N.**, and Paradis, C. (2019b). Motivations and mechanisms for the development of the reactive *what-x* construction in spoken dialogue. *Journal of Pragmatics*, *143*, 65–84.

All the articles are reproduced with the kind permission of the publishers. Carita Paradis and Victoria Johansson are my supervisors. Carita Paradis is the co-author of all the articles and Victoria Johansson co-authored Article 2. In all cases, I collected, annotated and analysed the data and took a lead role in developing the aims and research questions, and outlining, writing and revising the manuscripts. The supervisors contributed with guidance on the research, and editorial input on the writing. Article 1 is also co-authored with Matteo Fuoli. He contributed by helping with the experimental design, corpus annotation, statistical analysis and writing the article.

1. Introduction

The year 1975 will forever go down in the history of corpus linguistics as the year when a major event for linguists working with machine-readable collections of real language data took place. It is the year when Professor Jan Svartvik and colleagues at Lund University started the computerisation of the world's first spoken corpus with data from the 1950s–1980s, called the London–Lund Corpus of Spoken English (Svartvik, 1990; Svartvik & Quirk, 1980). The corpus was of crucial importance for research on spoken English at the time.[1] It was an indispensable resource for teasing apart differences between spoken and written language, and its focus on face-to-face conversation—the most common use of language—provided a window into the dynamic and complex nature of spoken language as it unfolds in real time. However, the world in which we live today is very different from the mid-20th century and so is the way we talk to each other. Therefore, in 2019 the London–Lund Corpus is a useful resource for studying recent change in spoken English, but it is no longer suitable for contemporary investigations. Moreover, the shortage of spoken corpora compiled after 1975 has left a gap in the investigation of contemporary speech based on naturally occurring data.

The lack of spoken corpora compared to corpora based on written sources is one out of many reasons why much of language research so far has focused on written language rather than spoken, conversational language (for a discussion, see Chafe & Tannen, 1987; Clark, 1996; Fillmore, 1981; Halliday, 1989). Another reason for the "written language bias" (Linell, 2005) is the impression of speech as being somehow inferior to writing. Halliday (1989, p. 76) contends that this is partly due to the conception of speech as disorderly and formless. Example (1) illustrates this point. The example is an extract from a face-to-face conversation between two speakers, a woman (A) and a man (B), who, when we join the conversation, are talking about A's recent trip to York.[2]

[1] See http://www.ucl.ac.uk/english-usage/archives/seu-biblio.htm for a list of publications based on the corpus.

[2] The reader is referred to Section 3.2.2 for the transcription and markup conventions used in the example. The transcription has been slightly simplified to facilitate the task of the reader.

(1)

1 A: York's getting a new cinema
2 B: is it
3 A: you know that Reel one the old Odeon that was slightly crap <pause/>
4 B: the one that closed down
5 A: on Blossom Street yeah
6 B: mm <pause/>
7 A: it's opening as an Everyman Cinema
8 B: oh
9 A: do you know what that is
10 B: do they show artsy films
11 A: no they I think they show blockbusters but there's there's much more comfortable seats and there's little buttons next to your seat and you can order yourself a burger and a pint or any drink you want
12 B: what and then a little robot brings it to you <pause/> [1][like the]
13 A: [1][what] <pause/>
14 B: I don't do they <pause/>
15 A: <vocal desc="laugh"/> I think it's just a [2][person but maybe a robot] I think it's like a posh you know it's it's a little bit more expensive than it would usually be to go to the cinema
16 B: [2][vocal desc="laugh"/>]
17 B: mm <pause/> oh I was <pause/> I know that it's ridiculous to plan Christmas already although I did see Christmas food in Sainsbury's yesterday
18 A: what mince pies <pause/>
19 B: all sorts of stuff <pause/> like mince pies nuts <pause/> Christmas pudding <pause/> loads of [3][stuff]
20 A: [3][what] in September [4][vocal desc="laugh/">]
21 B: [4][yeah <vocal desc="laugh/">]

On the one hand, the extract in (1) has a seemingly disorderly appearance. Sometimes it contains silences within and between the turns that A and B take, and at other times the speakers begin their turns without waiting for the interlocutor to finish his/hers, which gives rise to overlaps. Moreover, the extract is full of various types of hesitations such as false starts (*oh I was* in turn 17) that contribute to its messiness. On the other hand, the disorderly appearance of the extract is simply an artefact of the way the conversation has been written down (Halliday, 1989, p. 77). There is little evidence that the speakers themselves struggle to make sense of the conversation; if misunderstandings do arise, they are quickly and efficiently taken care of by the interlocutors. For example, the speakers make extensive use of constructions that invite the interlocutor to engage with the opinions and viewpoints

that they themselves advance. For example, A's use of *I think* in turn 15 indicates that the position put forward by her, namely that it is a person and not a robot that delivers the food, may not be the right one. In the same turn, speaker A reuses the word *robot* from B's prior turn to *resonate* and positively align with his humorous question. Finally, the speakers collaborate to resolve communicative problems by asking questions and making requests for clarification. The question *what and then a little robot brings it to you* in turn 12 is one out of many questions of this kind in the example.

The constructions and linguistic phenomena described above are empirically observable indications in a spoken corpus of how speakers coordinate and align their contributions to pursue joint goals (Clark, 1996). Moreover, they clearly illustrate the dynamic nature of meaning-making and meaning negotiation in spoken dialogue. However, it is also clear that their uses in (1) have only scratched the surface of their potential for meaning flexibility. For example, we know that *I think* does not have the same dialogic meaning under all contextual conditions and that resonance with prior words does not always lead to the same interpersonal effect. Furthermore, a closer look at all the *what*-question constructions in the example (turns 12, 18 and 20) reveals subtle differences in their dialogic function, which in turn may reflect different stages in the construction's development. Together with the general lack of spoken corpora, these are the kinds of issues that I address in this thesis. The next few sections bring them together under a common goal and present the specific research questions and aims pursued in the thesis.

1.1 Research questions

The question that guides and grounds the topics explored in the thesis is: What's in a dialogue? While an answer to this general question would be desirable, the present thesis breaks it down into two research questions. The first question is concerned with the nature of the units that make up dialogue, namely constructions, and the kinds of properties that influence their interpretation. Both formal and interactive properties are explored to extend the notion of construction in the directions of dialogicity, social interaction and spoken language. The specific research question is as follows.

RQ1. What formal and interactive properties influence the meaning of constructions in spoken dialogue?

To answer this question, I have chosen to focus on two constructions in English that are commonly used in, or specific to, spoken dialogue: *I think* COMPLEMENT and

the family of complement-taking predicate constructions, and the reactive *what-x* construction (e.g., *what and then a little robot brings it to you*).

The second research question is concerned with the underlying processes of dialogic meaning-making. It explores the social motivations and cognitive mechanisms that are at play when speakers are engaged in conversation. The research question that I pursue is as follows.

RQ2. What is the role of social motivations and cognitive mechanisms in dialogic meaning-making?

I focus on two phenomena that are ubiquitous in spoken dialogue, namely (i) when speakers resonate with each other's constructions to create new meaning affordances, dialogic resonance, and (ii) when over time constructions come to acquire new semantic and dialogic properties, meaning shifts and change.

Answers to these questions are offered in the four articles included in the thesis. Figure 1.1 provides a visual illustration of the order in which the articles appear in the thesis, the constructions and linguistic phenomena that they address, and the research questions that they pursue. As can be seen in the figure, Articles 1 and 3 are concerned with complement-taking predicate constructions such as *I think* COMPLEMENT and the reactive *what-x* construction respectively, and they pursue the first research question. The second research question finds its answers in Articles 2 and 4. While Article 2 focuses on dialogic resonance, Article 4 tracks the development of the reactive *what-x* construction over time.

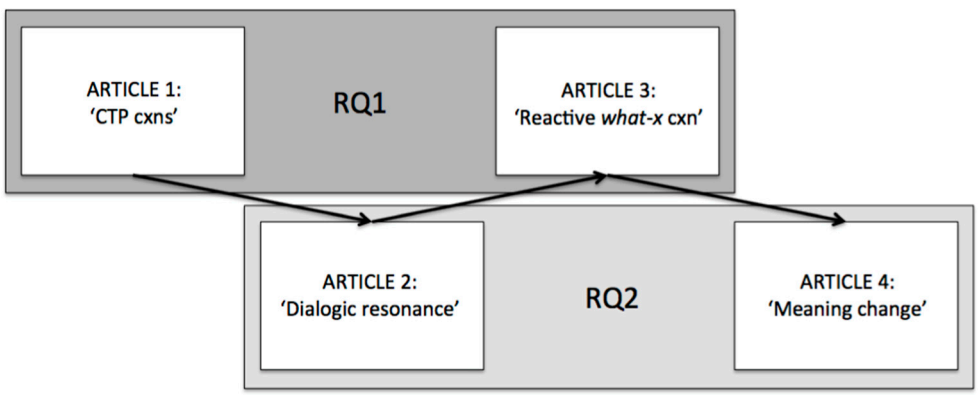

Figure 1.1. Progression of the articles included in the thesis, the constructions and linguistic phenomena that they address, and the broad research questions that they pursue
Cxn(s) stands for 'construction(s)' and CTP stands for 'complement-taking predicate'.

1.2 Aims and rationale

The aim of the thesis is two-fold, one theoretical and the other practical. The theoretical aim is primary and concerns the dynamic negotiation of meaning in spoken dialogue, and the practical aim is secondary and concerns the compilation of a new corpus of spoken English. The primary aim is to further our understanding of the use and development of *constructions in spoken dialogue*, and to propose a dynamic and socio-cognitive description and explanation of dialogic meaning-making. The work falls within the broad framework of usage-based Cognitive-Functional Linguistics (e.g., Barlow & Kemmer, 2000; Geeraerts, Grondelaers, & Bakema, 1994; Goldberg, 1995, 2006; Hilpert, 2014; Langacker, 1987, 2008; Tomasello, 2003), which adopts a contextualised conception of meaning in language. However, not even cognitive and functional linguistic approaches to language have been immune to the written language bias evident in the language sciences more generally, and even if they have generated investigations that embrace the idiosyncrasies of spoken dialogue (e.g., Du Bois, 2014; Garrod & Pickering, 2004), these investigations have emphasised either the cognitive or interactive dimensions of speech, while largely ignoring the interaction between them. This has left an unfortunate gap in our knowledge of how spoken dialogue really works. Specifically, we still have limited understanding of the kinds of properties that influence constructional meaning and the underlying processes that govern the emergence, interpretation and development of constructions in spoken dialogue.

The present thesis seeks to contribute to this knowledge gap by drawing on a range of constructions, cognitive-functional approaches and methodological techniques to develop a better understanding of the workings of spoken dialogue. In Article 1, we question the rigid treatment of complement-taking predicate constructions and particularly *I think* COMPLEMENT in APPRAISAL theory (Martin & White, 2005), where the constructions are classified as serving either expansive (e.g., *I think*) or contractive (e.g., *I know*) functions, meaning that they either open up the dialogic space for possible alternative viewpoints or close them down. The aim of Article 1 is to determine whether this is indeed the case and, if not, what contextual factors affect the dialogic meaning of *I think* COMPLEMENT in spoken discourse. Article 2 focuses on dialogic resonance (Du Bois, 2014). Previous research in interactional linguistics has focused on the intersubjective functions that resonance has in discourse, and cognitive psychology regards linguistic alignment as a mechanistic process driven by automatic priming. Article 2 brings together insights from interaction and cognitive processing of speaker turns in dialogue to investigate the interaction of intersubjective processes and priming mechanisms in resonance production. Articles 3 and 4 are both concerned with the reactive *what-x* construction. The aim of Article 3 is to define and describe the constructional

properties of the construction in spoken dialogue and, in so doing, propose a broadening of the notion of construction in Construction Grammar to go beyond form–meaning pairing in the strict lexical–semantic sense. Article 4 combines insights from constructionist approaches to language change and pragmatic inferencing to track the diachronic development of the reactive *what-x* construction with respect to the social processes that motivated the development and the cognitive mechanisms that operated on the conceptual level. The methodological techniques in this thesis are a combination of corpus and experimental methods, and qualitative and quantitative approaches to corpus analysis, thus giving us diverse access to how spoken language is produced and interpreted in real time (for a more detailed overview of the studies, see the summaries in Chapter 4).

This leads us to the secondary aim of the thesis, which is practical in nature. It relates to the compilation of a brand new corpus of spoken British English, the London–Lund Corpus 2 (LLC–2), which ran in parallel to writing the thesis. LLC–2 is a half-a-million-word collection of spoken English texts recorded with adult native speakers of British English in the UK and Sweden in 2014–2019. The speech settings range from private conversations to public discussions and speeches. All the decisions made during the compilation process are documented in a detailed corpus manual[3] and summarised in Section 3.2.2 of the thesis. On the one hand, LLC–2 can be used to study naturally occurring conversation such as the one in (1) above from a contemporary perspective. On the other hand, it is comparable to the first London–Lund Corpus (LLC–1) from the 1950s–1980s. Together, the two corpora provide an excellent resource for short-term diachronic investigations.

The rationale behind compiling LLC–2 as part of the thesis project is due to the shortage of publicly available spoken corpora in English. Furthermore, the outlook for studying conversation from a contemporary as well as a back-in-time perspective is not promising. By the time I started my PhD in 2014, I had become keen on the idea of using LLC–1 as the earliest available corpus for diachronic analysis, but I was not able to find a corpus that served the two-fold purpose of being (i) comparable to LLC–1 and (ii) representative of contemporary spoken English (see Section 3.2 for a brief overview of publicly available spoken corpora in English). Therefore, the decision was made to initiate the compilation of a new corpus of spoken English, called LLC–2. The present thesis outlines the main challenges of planning, designing and compiling LLC–2 as both a comparable and a contemporary corpus.

The samples used to study spoken dialogue in the thesis are extracted from everyday face-to-face conversation in the London–Lund Corpora. The articles included in the thesis take full advantage of the corpora as synchronic and diachronic resources. Articles 1, 2 and 3 make use of LLC–1 and LLC–2 as synchronic resources representative of face-to-face conversation at a particular time.

[3] Available from https://www.sol.lu.se/index.php?id=58993

Article 1 draws on a sample from LLC–1, while the samples in Articles 2 and 3 are from LLC–2. Article 4 makes use of the London–Lund Corpora as diachronic resources comparing samples from LLC–1 and LLC–2. The importance of LLC–2 for the thesis, however, goes well beyond the practical use of it. The compilation of the corpus during my PhD studies created a situation where many of the topics explored in the studies have their origins in the observations made during the transcription process. The most conspicuous example is the discovery of the reactive *what-x* construction, which has not received any attention in the literature so far.

1.3 Outline of the thesis

The thesis is organised as follows. Chapter 2 presents the theoretical background and introduces the theoretical approaches used in the articles. The approaches are situated within the broad framework of Cognitive-Functional Linguistics with focus on constructions (Construction Grammar), and stance-taking and intersubjective engagement. The approaches used to study the latter are APPRAISAL theory and Dialogic Syntax with focus on dialogic resonance. Chapter 3 describes the data and methods used in the thesis. First, it gives an overview of corpus linguistics as a methodological approach, the standards and procedures followed in the manual annotation of spoken, conversational data, and the growing practice of converging evidence from corpus and experimental methods. The second part of the chapter focuses solely on the London–Lund Corpora. The corpora are introduced one at a time, after which a discussion of their comparability is presented. Chapter 4 provides summaries of the four articles included in the thesis. Chapter 5 answers the research questions posed in Chapter 1, discusses the contributions that the findings make to spoken dialogue and other related disciplines, and considers the opportunities that the limitations of the thesis provide for future work.

2. Theoretical background

The theoretical aim of developing a more comprehensive understanding of the workings of spoken dialogue in this thesis is addressed through the broad framework of Cognitive-Functional Linguistics. It is an umbrella term used to describe a family of cognitive and functional linguistic approaches to language with shared core assumptions, the most important of which is the centrality of meaning for linguistic analysis (Langacker, 1987, p. 12). However, the approaches differ in the relative importance given to the symbolic nature of meaning on the one hand and the interactive side of meaning on the other hand. Section 2.1, and particularly Section 2.1.1, presents the cognitively oriented grammatical approach that is primarily concerned with the symbolisation of meaning, namely Construction Grammar. While Construction Grammar accepts the interactive side of meaning, it has not fully embraced it. However, developments in this regard have been made recently in spoken dialogue (Section 2.1.2) and historical linguistics (Section 2.1.3). Section 2.2 approaches meaning from the perspective of interaction. It introduces two frameworks in Cognitive-Functional Linguistics where interaction is central, but where insights from the cognitive dimension are imminent: APPRAISAL theory and Dialogic Syntax with focus on dialogic resonance. These are discussed in Sections 2.2.1 and 2.2.2 respectively.

2.1 Construction Grammar

According to Langacker (2008, p. 7), human language is shaped and constrained by the two main functions that it serves: the semiological function and the interactive function. While the semiological function focuses on the symbolic nature of meaning in language, the interactive function draws on communicative processes such as manipulation, expressiveness and social behaviour (cf. Paradis, 2008, 2012; for more information on the interactive function, see Section 2.1.2). Much of cognitive linguistic research to date has been mainly concerned with the semiological function and the way in which speakers' conceptualisations of the world are mapped onto specific linguistic forms, so-called form–meaning pairings (Langacker, 2008). These form–meaning pairings are referred to as *constructions*

and they lie at the heart of Cognitive Linguistics in general and Construction Grammar (CxG) in particular.

CxG is a relatively recent grammatical approach within Cognitive Linguistics that rose to prominence in the 1980s and 1990s with seminal publications such as Lakoff (1987), Fillmore, Kay, and O'Connor (1988) and Goldberg (1995). The main concern of these and other early studies was to develop a model of grammar that can account for the entirety of speakers' knowledge of a language without rendering any aspect of grammar too 'peripheral' to merit researchers' attention. Therefore, the focus was on units of language that do not obey traditional phrase and clause structure rules such as the deictic *there* (e.g., *there's Harry*; Lakoff, 1987), *let alone* (e.g., *I barely got up in time to eat lunch, let alone cook breakfast*; Fillmore et al., 1988) and various argument structure patterns such as the ditransitive construction (e.g., *Joe refused Bob a raise in salary*; Goldberg, 1995). The most important conclusion drawn from the studies was that the meaning of the constructions cannot be attributed to their component parts, but is associated with the construction as a whole. For example, in the case of the utterance *Joe refused Bob a raise in salary*, which is an example of a ditransitive construction involving the verb REFUSE, it is not the main verb that is responsible for the interpretation of the construction as expressing negative transfer of possession, but it is the combination of the verb with the double-object argument structure pattern Subj-V-Obj1-Obj2 that gives it its meaning (see also Hoffmann, 2019). However, these early studies were never meant to limit CxG to the study of a particular group of linguistic units with non-compositional meanings, but they were always intended to illuminate the study of 'core' units of language, as illustrated by this quote by Fillmore and colleagues from the late 1980s: "the machinery needed for describing the so-called minor or peripheral constructions […] will have to be powerful enough to be generalized to more familiar structures" (Fillmore et al., 1988, p. 534). This ambition has since then become a reality, because today constructions are seen as fundamental units of human language that cover all levels of form and meaning (Hoffmann, 2017, p. 311). The next section takes a closer look at some of the levels and the nature of the form–meaning mapping.

2.1.1 What is a construction?

Since the 1980s, a number of different constructionist approaches have been developed.[4] All of them acknowledge the status of constructions as fundamental units of human language, but they differ considerably in their understanding of what a construction is and how it comes to be associated with its defining properties. The present thesis subscribes to the Cognitive CxG approach, which takes a strong

[4] See Hoffmann (2017) for a recent survey of CxG approaches.

usage-based view of the role of natural language use in the structuring of grammatical knowledge (e.g., Boas, 2013; Goldberg, 1995, 2006; Lakoff, 1987). The definition of construction that follows from this approach and that guides the grammatical description and explanation of the constructions explored in this thesis is as follows.

> Any linguistic pattern is recognized as a construction as long as some aspect of its form or function is not strictly predictable from its component parts or from other constructions recognized to exist. In addition, patterns are stored as constructions even if they are fully predictable as long as they occur with sufficient frequency. (Goldberg, 2006, p. 5)

Goldberg's (2006) definition reflects the usage-based view that speakers' constructional knowledge of a language contains both item-specific and generalised information that is organised in the constructional network at varying degrees of abstraction and schematicity. Accordingly, the network contains mixed levels of representation involving constructions of different size and complexity. Therefore, Goldberg's (2006) definition captures early constructions such as the above-mentioned deictic *there* (Lakoff, 1987), *let alone* (Fillmore et al., 1988) and the ditransitive construction involving double objects (e.g., *Joe refused Bob a raise in salary*; Goldberg, 1995) but also more familiar structures such as morphemes (*pre-* and *-able*), words and phrases like *robot* and *I think*, and more canonical grammatical patterns such as the transitive construction (e.g., *Joe raised Bob's salary*). At the lowest level of the network, we find specific instantiations of constructions, called *constructs*, uttered by a particular person for a particular communicative purpose. For example, the utterance *Joe raised Bob's salary* is a construct instantiating the general transitive construction.

A defining criterion of the more familiar constructions, according to the definition by Goldberg (2006), is frequency. Specifically, Goldberg (2006) argues that such constructions qualify as fully-fledged form–meaning pairings as long as they occur with 'sufficient frequency'. However, the term is problematic if we assume that there is a frequency threshold above which constructions become entrenched in the speaker's knowledge of a language. This is because such a threshold most likely does not exist or is impossible to be operationalised in quantitative terms. For example, Gries (2008) notes that he is "not aware of any rigorous operationalization of a sufficient frequency threshold" (p. 13). In a later publication, Goldberg (2019, p. 54) explains that sufficient frequency does not involve some number *n*, but relates to repeated exposure to concrete instances of language use that become more strongly entrenched every time the memory trace associated with them is reinforced. For example, there is strong empirical evidence that the first-person epistemic complement-taking predicate *I think* has constructional status rather than being a construct of a more general grammatical pattern. This is largely due to the very high frequency with which the phrase occurs in conversation, which has led to the

establishment of the highly entrenched I THINK schema (Van Bogaert, 2010). The high degree of entrenchment of *I think* is supported by the fact that, compared to other, less frequent complement-taking predicates such as *I imagine*, the I THINK schema has become increasingly productive and sanctioned the largest range of variant forms as illustrated in spoken corpora (e.g., *I thought*, *I would think*, *I don't think*). Van Bogaert (2010, p. 421) argues that some of the variant forms have become highly entrenched units in their own right. Thus, the view taken in this thesis is that frequency and entrenchment are a matter of degree and replication rather than all or nothing (see also Clark & Trousdale, 2009, p. 38; Traugott & Trousdale, 2013, p. 5).

Moreover, it is not only the frequency of the construction itself that counts as a criterion of constructionhood, but speakers also seem to have probabilistic knowledge about the mutual association between constructions and the lexical items with which they occur (so-called collostructions; e.g., Stefanowitsch & Gries, 2003). For instance, Hilpert (2008) reports that the modal auxiliary *will* has a complex collocational profile that reflects an attraction towards certain types of lexical verbs and repulsion of other types of verbs, a notion that in the constructional network is reflected in the relative strength of links between the items. Therefore, *will* has strong links to verbs that express a low degree of transitivity and dynamicity, and a lack of intentional agents (e.g., *come*, *need*, *continue*; *hopefully something better will come along*; Hilpert, 2008, p. 102), and much weaker links to verbs that lack those semantic features (see also Hilpert, 2016 for the modal auxiliary *may*). The argument that Hilpert (2008) makes is that these collocational preferences must be seen as integral parts of speakers' linguistic knowledge (see Section 2.1.2 for more information on the constructional representation of collocational knowledge).

As mentioned above, a fundamental principle of CxG is the symbolic mapping between the form and the meaning of constructions. The question that naturally arises is: what linguistic information is associated with the form and meaning dimensions? An answer to this question is partly provided in Figure 2.1 from Croft and Cruse (2004, p. 258). In Figure 2.1, the outmost box represents the construction as a whole and the two inner boxes represent the form and the meaning with a symbolic link between them. The formal dimension as represented in the upper box is associated with syntactic, morphological and phonological properties, while the conventional meaning in the lower box contains properties related to semantics, pragmatics and discourse-function.

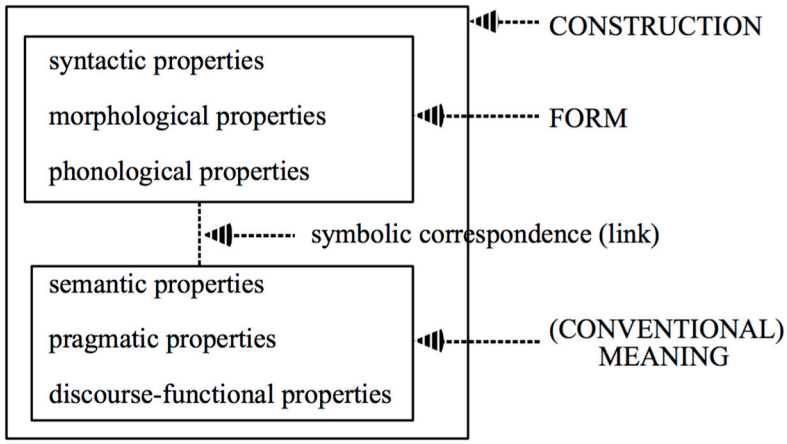

Figure 2.1. The form–meaning mapping of a construction (Croft & Cruse, 2004, p. 258)
The outmost box represents the construction as a whole and the two inner boxes represent the form (upper box) and the meaning (lower box) with a symbolic link between them.

The seemingly all-inclusive nature of the meaning dimension in Figure 2.1 is due to the commitment of Cognitive CxG to the frame semantic approach to meaning developed by Fillmore (1982). In Frame Semantics, meaning is explained in terms of so-called frames, defined as cognitive schemas that speakers use to interpret events and situations in the world. Thus, the meaning of a word is dependent on its conceptual underpinnings, knowledge of which is necessary for an appropriate use of the word. A much-cited example is the commercial frame with its corresponding frame elements: a buyer, a seller, goods and money. The frame incorporates a number of different but semantically related verbs that index or evoke certain aspects of the commercial frame with varying degrees of prominence. For example, the verb *buy* focuses on the actions of the buyer and the goods, backgrounding the seller and the money, and the verb *sell* focuses on the actions of the seller and the goods, backgrounding the buyer and the money. Fillmore (1982) argues that the only way for speakers to know the meanings of the verbs is if they know what takes place in the commercial frame and the background of experiences and practices that motivated the creation of the categories represented by the verbs.

The frame semantic approach to meaning is broad, but its focus on the conceptual underpinnings of meaning as evoked in argument structure patterns and verb semantics has left an unfortunate gap in our knowledge of how constructional meaning is framed and negotiated in longer sequences of discourse. Fillmore (1982, p. 117) acknowledges the fact that framing takes place in actual communicative situations and that the meaning of words is at least partly dependent on our ability to conceptualise what is going on between the speaker and the addressee, but this idea has not received widespread attention in CxG. It is therefore evident that construction grammarians have not gone far enough in adopting a truly interactive

and dialogic view of language, a view that can only be substantiated if the focus of attention is turned to discourse in general and for my purposes spoken dialogue in particular. However, developments in this regard have been made recently and are discussed in detail in the next section.

2.1.2 Developments into spoken dialogue

In addition to the semiological function, language also serves an interactive function (Langacker, 2008, p. 7). The interactive function sees meaning in language as emerging dynamically in discourse and social interaction among interlocutors who seek not only to provide information but also to express their subjective stance and establish intersubjective engagement with each other (cf. Paradis, 2008, 2012). CxG accepts the interactive function, but it has not fully embraced it. However, the synthesis of the semiological and interactive functions is crucial for a comprehensive description and explanation of natural language use, as indicated by this quote from Paradis (2012): "language use must be explained with reference to the underlying mental processes as well as with reference to the social and situational context" (p. 690). This idea has recently been recognised in a small but fast-growing body of research in CxG that has been truly committed to extending the conception of construction into spoken dialogue. The present thesis joins this line of research with developments into synchronic and diachronic investigations of constructions in spoken dialogue. This section provides the background for the former and Section 2.1.3 provides the background for the latter.

Despite its novelty in CxG, the modern study of spoken dialogue goes back a long way. It started with German expressivists such as Herder (1771/1967) and Humboldt (1836–1839) in the 18th and 19th centuries and was picked up again by the Russian scholars Bakhtin (1975/1981) and Vološinov (1929/1973) in the early 20th century. Bakhtin (1975/1981) and Vološinov (1929/1973) took a strong stance against the predominant view of language at the time, which posited that language is a ready-made, normative and static system of symbols (Markovà & Foppa, 1990, p. 5). Instead, they argued that at the core of all human sense-making is the understanding that our existence in this world is deeply interdependent with the existence of the people around us. Accordingly, then, language must be seen as being shaped by social interaction and communication between conversational participants who are involved in the mutual consideration of each other's intended meanings, opinions and viewpoints, and assumptions of common ground. Common ground is the "mass of knowledge, beliefs and suppositions" (Clark, 1996, p. 12) that the conversational participants appeal to in their pursuit of joint goals. The most important setting for dialogic interaction is face-to-face conversation, with all other

settings being at best derived from it (cf. Clark, 1996; Fillmore, 1981).[5] However, this does not mean that the dialogic view of language is only fostered in spoken language; verbal performance of any kind, also in printed form, is a form of dialogic interaction, and understanding it is a dialogic enterprise (Markovà & Foppa, 1990, p. 4; Vološinov, 1929/1973, p. 95; see Section 2.2.1 for the expression of dialogicity in written registers in APPRAISAL theory).

The ideas above were influential in the development of conversation analytic and interactional linguistic approaches to social interaction in the late 1960s and early 1970s. Conversation Analysis (CA), in particular, is nowadays commonly used to study the dynamic and situated nature of spoken interaction (e.g., Atkinson & Drew, 1979; Cameron, 2001; Drew & Heritage, 1992; Levinson, 1983; Reed & Raymond, 2013; Sacks, Schegloff, & Jefferson, 1974; Schegloff, 2007; Selting & Couper-Kuhlen, 2001). CA departs from the view that talk in interaction is systematically organised, and its goal is to arrive at a comprehensive understanding of the conversational patterns that participants draw on when organising it. This is done through detailed sequential analyses of the types of turns that participants take in conversation and the social actions that they carry out in doing so (e.g., assessments, questions). An analysis of the commonly used English interjection *oh*, for example, makes reference to the numerous turn types in which the interjection occurs and the social actions that it performs, and how these affect the contextual interpretation of *oh* (Heritage, 1984, 1998, 2002, 2005). A typical use of *oh*, for instance, is when it co-occurs with assessments to propose a change of state in the speaker's awareness of the preceding turn (e.g., *I passed the exam -> oh great*; Heritage, 1984). Importantly, CA focuses on what is observable in conversation by way of speakers' own understandings of the interlocutor's intended meaning rather than imposing cognitive explanations on the data that are not demonstrably relevant to the speakers themselves. It is therefore not surprising that Heritage (2005) rejects the notion that *oh* is a symptom of cognitive processing: "*oh* production is more likely to be driven by the external demands of interaction rather than the internal pressures of cognitive expression" (p. 191).

At first sight, then, CA and CxG are based on very different theoretical and methodological assumptions about language and the functions that it serves. While CA draws exclusively on the interactive function of language, CxG directs its attention to the semiological function, largely ignoring what is going on between the speaker and the addressee. However, as demonstrated recently by many

[5] The centrality of face-to-face conversation in dialogicity is reflected in the fact that the term 'dialogue' is used to refer to both the interdependence of human sense-making and face-to-face conversation between two or more participants in the concrete sense (Holquist, 1981; Linell, 2009a, 2009b; Markovà & Foppa, 1990). These are the broad and narrow senses of the term respectively. In this thesis, they are used interchangeably to refer to both the dynamic view of language in the epistemological sense and the naturally occurring face-to-face conversations from the London–Lund Corpora that form the basis of the investigations.

conversation analysts and construction grammarians working at the crossroads of the two approaches, CA and CxG have more in common with each other than what immediately meets the eye (e.g., Brône & Zima, 2014; Deppermann, 2006; Deppermann & Günthner, 2015; Fischer, 2015; Fried & Östman, 2005; Imo, 2005, 2015; Linell, 2009a, 2009b; Wide, 2009). In fact, the approaches are considered to be complementary and have the potential to inform each other in a way that brings together interaction and cognition under one research agenda. From the perspective of CA, a constructionist grammatical approach provides the analyst with the necessary tools to account for what is stable in a language and the generalisations that speakers make across concrete instances of language use. For example, Fischer (2015) argues that the special interpretation of *oh* does not originate in the interjection itself but the sequential context in which it occurs (*oh*-PLUS-ASSESSMENT). This sequential context is a construction that is schematic and may incorporate other discourse markers with different corresponding interpretations (compare *I passed the exam -> well great*).

From the constructionist perspective, CA shifts the focus away from the sentential level of linguistic analysis to larger sequences of spoken dialogue that have the potential to provide valuable new insights into what constitutes constructional knowledge.[6] An early example of a study in CxG that successfully borrows insights from CA is Fried and Östman (2005) on a number of pragmatic particles in the Swedish dialect Solv and contemporary spoken Czech. The authors argue that "CxG is well equipped to address the complexities of spoken language, if one allows the notion of construction to be extended in a dialogical direction" (Fried & Östman, 2005, p. 1776). In their analysis, each particle is a crystallisation of a cluster of potential meanings incorporating "not just morphosyntactic or lexical-semantic information, but also conventionalized pragmatic and interactional features" (Fried & Östman, 2005, p. 1773), motivated by culturally embedded rules of social interaction in the respective communities. These potentialities are pragmatically codified constraints on the use of the particles that are actualised in a given context and for a particular communicative purpose (see Section 2.1.3 for a more detailed discussion of the Czech particle). Similarly, Linell (2009a, p. 99) contends that no construction has a completely fixed meaning that is actualised in all discourse contexts, but rather the meaning potential combines with local, contextual factors to yield situated meanings and functions (cf. Paradis, 2011).

Extension in a dialogic direction does not only concern the meaning dimension of constructions, but it has implications for their formal structure, too. For example, Linell (2009a, 2009b) makes an important distinction between the internal structure

[6] Here, I take the perspective of a construction grammarian concerned with extending the conception of construction into spoken dialogue rather than a conversation analyst applying cognitive principles to conversational practices.

of constructions and their external structure.[7] While the internal structure contains information about internal, constituent-level properties such as syntax, morphology and phonology (see Figure 2.1 above), the external structure specifies the dialogic and sequential constraints that a construction has in discourse. The distinction between internal and external properties is an important one in CxG, but it is only recently that the external dimension has started to be understood not only in terms of constructional meaning but also with respect to how the construction interacts with other linguistic resources (Fried, 2013; see Section 2.1.3 for a discussion of the importance of the internal/external distinction for language change).

Linell (2009a, 2009b) identifies three different subaspects of external structure: (i) the conditions that a construction sets up on prior context, (ii) the conditions that it sets up on subsequent context and (iii) the systematic association between the construction and specific linguistic resources (i.e., collocational preferences). The first two conditions relate to the sequential dependence of utterances, which is a property of connected coherent speech that postulates that every utterance is a response to what has been said and done before and a projection of what could possibly be said and done next. Linell (2009b, p. 301) argues that some constructions have become so tied up with their surrounding discourse that they have incorporated into their form features that are systematically related to the sequential context in which they occur. If a construction is systematically related to something specific in prior context, it is a *responsive construction*; if it embodies "projections of, or preferences for, certain kinds of next utterances as responses" (Linell, 2009b, p. 301), then it is a *projective construction*. For example, the *oh*-PLUS-ASSESSMENT construction as mentioned above is responsive because its systematic occurrence as a response to the interlocutor's prior turn suggests that an appropriate use of the construction requires knowledge of that turn. However, there does not seem to be anything in the subsequent context that renders the construction projective. Therefore, the *oh*-PLUS-ASSESSMENT construction has responsive but not projective properties in discourse.

The third condition concerns the mutual dependence of constructions and specific linguistic resources, that is, collocations, meaning that speakers have idiomatic knowledge of constructions and the linguistic resources that they 'co-select' (Linell, 2009a, p. 104). For example, a quick search of the British National Corpus reveals that speakers often combine the *oh*-PLUS-ASSESSMENT construction *oh right* with agreement tokens such as *yeah* (67 times in a span of three words on each side) and *okay* (20 times).[8] In the same way, the modal auxiliary *will*, as discussed in Section

[7] Linell (2009a, 2009b) seems to use the terms 'structure' and 'syntax' interchangeably to refer to the formal dimension of the form–meaning mapping. In this thesis, I prefer the term 'structure', because it is broader and describes the entirety of the formal dimension rather than only a part of it (i.e., the syntactic component).

[8] Accessed via BNCweb (Hoffmann, Evert, Smith, Lee, & Berglund Prytz, 2008).

2.1.1 above, collocates with lexical verbs such as *come*, *need* and *continue* (Hilpert, 2008), which, according to Linell (2009a, 2009b), is a property of *will* that pertains to its external structure.

As mentioned above, the internal structure of constructions is made up of properties such as syntax, morphology and phonology, properties that have received widespread attention in CxG. However, there is one aspect of internal structure that has been largely ignored in the literature and that is prosody. Prosody is different from phonology proper; while phonology proper makes reference to individual phonetic segments (vowels and consonants), prosody relates to suprasegmental properties of syllables, words and utterances such as intonation, tone, stress and rhythm, and is central to understanding speaker intent. For example, Local (1996) shows that many of the contextual interpretations of *oh* identified by Heritage have distinct intonational patterns; the *oh*-PLUS-ASSESSMENT construction, for instance, often has a rising pitch contour. Moreover, Fox Tree and Clark (1997) argue that, in spoken dialogue, "speakers mean things by a variety of choices that aren't lexical or syntactic" (p. 165), intonation being one of them.

However, grammatical analyses of the prosodic marking of constructions are still scarce (but see Fried & Östman, 2005; Michaelis & Feng, 2015; Paradis, 1997, 2000, 2003). The observation is supported by the fact that construction grammarians are yet to reach consensus as to the constructional status of prosody in general and intonation in particular. Goldberg (2015) entertains two alternatives, one in which intonation is a local contextual feature that plays a role in the determination of interpretations, and the other in which intonation is a structural feature.[9] Here, previous empirical research on spoken dialogue may provide an answer. For example, Fried and Östman (2005) consider prosody to be one of the defining features of the pragmatic particles included in their study. They report that all the particles have distinct prosodic properties, including whether or not the particle is accented, or whether it is accompanied by question intonation (rising pitch contour) or assertion/declarative intonation (falling pitch contour). However, as with all the features in their analysis, these patterns are only potentialities and the final prosodic realisation of the particles depends on the contextual niche in which they occur. Therefore, the constructional status of prosody seems to rest on both the established system of features and the interpretations that arise in local context. However, more research is needed to confirm this.

The insights above are instrumental to the analysis of all the constructions explored in the thesis, and particularly complement-taking predicate constructions such as *I think* COMPLEMENT in Article 1 and the reactive *what-x* construction in Article 3 from a synchronic perspective (see Section 2.1.3 for the diachronic perspective). While *I think* COMPLEMENT is a well-known construction in English

[9] Goldberg (2015) uses the term 'syntax', but again the broader term 'structure' is preferred over the narrower term.

(see Section 2.2.1 for more information on the construction), the reactive *what-x* construction has not received any attention in the literature so far. Three examples of the construction were given in (1) above; one of them is repeated in (2) for convenience. The reactive *what-x* construction is in bold.

(2) A: there's little buttons next to your seat and you can order yourself a burger and a pint or any drink you want
B: **what and then a little robot brings it to you** <pause/> [like the]
A: [what] <pause/>
B: I don't do they <pause/>
A: <vocal desc="laugh"/> I think it's just a person but maybe a robot

The example in (2) is clearly a construction (Goldberg, 2006) in that it has formal properties that deviate from more canonical grammatical patterns in English (*what* connects directly with *and then a little robot brings it to you*), and the occurrence of the construction in three different occasions in (1) suggests that it is not a one-off, but used repeatedly by more than one speaker.

Both *I think* COMPLEMENT and the reactive *what-x* construction are fitting examples of constructions in spoken dialogue since they display many of the formal and interactive properties discussed above. The constructional representation of the constructions makes reference to both internal (syntactic–prosodic) and external structure (sequential–collocational) but also to dialogic functional and social information (see Sections 4.1 and 4.3 for summaries of Articles 1 and 3 respectively).

2.1.3 Developments into historical linguistics

The reactive *what-x* construction is also the topic of Article 4. The construction is used to illustrate the underlying cognitive mechanisms and social motivations that play a role in meaning shifts and change in spoken dialogue. The study draws on another recent development in CxG, namely into historical linguistics, called Diachronic Construction Grammar (DCxG; e.g., Barðdal, Smirnova, Sommerer, & Gildea, 2015; Bergs & Diewald, 2009; Fried, 2009, 2013; Hilpert, 2013; Hoffmann & Trousdale, 2011; Israel, 1996; Noël, 2007; Norde, De Clerck, & Colleman, 2014; Traugott, 2018a, 2018b; Traugott & Trousdale, 2013). DCxG is a welcome extension of CxG, but it also suffers from many of the same theoretical shortcomings as its predecessor. The most important of them for the purposes of this thesis is the understanding of language change in terms of the semiological function of language and disregard for the role of socio-communicative and interactive factors (but see Fried, 2009, 2013; Traugott, 2018a, 2018b; Traugott & Trousdale, 2013). Therefore, the approach needs to be complemented with insights from other,

more functionally-oriented models of language change. A fitting model in this regard is the Invited Inferencing Theory of Semantic Change developed by Traugott and Dasher (2005). This section provides the motivation for combining insights from DCxG and the Invited Inferencing Theory in Article 4 (see Section 4.4 for a summary of the article).

DCxG has many advantages over other, better-known approaches to language change. The main strength of DCxG lies in its all-inclusive conception of grammar that covers all levels of language as established in Section 2.1.1 above. In this regard, it is an improvement of Grammaticalisation Theory (e.g., Davidse, Vandelanotte, & Cuyckens, 2010; Heine, Claudi, & Hünnemeyer, 1991; Heine & Kuteva, 2002; Himmelmann, 2004; Hopper & Traugott, 2003; Kuryłowicz, 1965/1976; Lehmann, 1995, 2004; Meillet, 1912/1975; Narrog & Heine, 2011; Traugott, 2010a), the long and rich history of which has been somewhat muddied by major disagreement among grammaticalisation scholars as to what exactly constitutes grammar. The opposing parties can be roughly divided into two traditions: (i) grammaticalisation as reduction and increased dependency and (ii) grammaticalisation as expansion (Traugott & Trousdale, 2013).

As a proponent of the first tradition, Lehmann (2004) defines grammaticalisation as a process of reduction and increased dependency where a linguistic item "loses in autonomy by becoming more subject to constraints of the linguistic system" (p. 155). This characterisation has primarily been applied to morphological change such as tense, aspect, modality, etc. The second tradition proposes an extended view of grammaticalisation that is applicable to linguistic items that do not fare well under the reductionist approach such as pragmatic markers. In this view, grammaticalisation necessarily involves an expansion of collocational, syntactic and semantic/pragmatic range (Himmelmann, 2004). Therefore, the two traditions highlight fundamentally different aspects of grammaticalisation and are distinctly restricted in their scope. However, this is not an issue in DCxG where grammar is seen as an inventory of complex constructions that incorporate all linguistically relevant information including morphosyntax and pragmatics.

Despite the shortcomings of Grammaticalisation Theory, DCxG has benefitted greatly from its theoretical foundations. First, the locus of change in Grammaticalisation Theory is not an isolated linguistic item but a construction, which in the grammaticalisation literature is a "syntactic string, phrase or constituent" (Traugott, 2010a, p. 277). Second, the change proceeds in a largely gradual manner involving stepwise, feature-based adjustments that may or may not be immediately perceptible to the language user (Fried, 2013, p. 425). The reconfiguration of construction in DCxG as a form–meaning pairing rather than a syntactic string means that both the form and the meaning and the link between the two are considered together (Traugott, 2010a, p. 277). However, this is in no way to imply that the construction as a whole undergoes change (but see Croft, 2001), which would be too simple an explanation for what is otherwise a complex and

gradual process. Instead, the general view in DCxG is that language change affects both the internal, constituent-level properties of constructions and the external, constructional properties that operate on the contextual level (Fried, 2009, pp. 422–423; see Section 2.1.2 above for a breakdown of the properties). Moreover, the locus of change in DCxG is not a construction but a construct, an instance of use, and change takes place when the construct becomes established as a construction in the constructional network.

By way of illustration, Fried (2009) carries out a diachronic analysis of one of the pragmatic particles explored in Fried and Östman (2005), namely the Czech word *jestli*. The study tracks the development of *jestli* from a clausal indirect *yes–no* question mainly used in written Czech, (3), to a non-clausal subjective modal particle mainly used in spoken Czech, (4).[10] The examples are from the Czech National Corpus and in both cases *jestli* and its English translations are given in bold.

(3) *ale von je takovej v pohodě, já nevim,* ***jestli*** *tam byl ňáko nervózní*
'but he's such a laid-back [type], I don't know **if** he was at all nervous there' (Fried, 2009, p. 264)

(4) *a tak NJ nešel, že jo, no tak potom ho, potom ho volal, někdo mu volal,* ***jesi*** *NP nebo kdo že už, že už de rovnou*
'and so NJ was not coming, right, well and so then somebody called him, **I-think-maybe** NP or somebody, that, that he's going straight [there]' (Fried, 2009, pp. 264–265)

Fried (2009) reports that each stage in the development of *jestli* is a distinct cluster of structural, semantic–pragmatic and discourse–functional properties with cut-off points along all of them.[11] The development proceeds through gradual shifts in each of the properties that together contribute to the overall establishment of the distinct senses (polysemies) of *jestli*. Gradual shifts in either the form or the meaning dimension of constructions are *constructional changes* in Traugott and Trousdale (2013), and the creation of a new form–meaning pairing in the constructional network (e.g., the polysemy network of *jestli*-patterns) is *constructionalisation*. It is important to note that constructional changes do not only precede constructionalisation, but they may also follow it. These changes typically affect the

[10] Note that, in spoken Czech, the standard written form *jestli* may appear in various phonetically reduced forms (e.g., *jesi*).

[11] The development also involves a third, intermediary stage where *jestli* functions as a subjective assertion. This stage is not discussed separately here because most of its properties are shared by the modal function.

contextual behaviour of the new construction and its expansion into new discourse contexts (Traugott & Trousdale, 2013, pp. 123–124).

However, it is not enough to simply list the shifts and changes that a construction undergoes if one wishes to understand the actual mechanisms and processes that play a role in the emergence and further development of constructions. Paradis (2004, 2011) argues that the key mechanism in semantic change is metonymisation. In Cognitive Semantics, metonymisation is a cognitive process that operates on the conceptual structure of constructions and profiles salient aspects of their meaning potential on the occasion of use (Paradis, 2011, p. 81). Fried (2009) argues that the development of *jestli* is clearly a case of metonymisation. She reports that the meaning of the original *jestli*-pattern, the clausal indirect *yes–no* question, is to express lack of factual knowledge, a meaning contributed to it by the main verb of the complex utterance (typically *I don't know*). In the case of the most recent *jestli*-pattern, the subjective modal particle, *jestli* no longer serves as a starting point of a subordinate clause but as a free-standing clause in its own right, the meaning of which is to express potential knowledge. The argument that Fried (2009, p. 281) makes is that the new meaning is due to the metonymic transfer of uncertainty from the implied main verb to the *jestli*-clause and the reinterpretation of *jestli* as a declaration of the speaker's own subjective, albeit tentative, opinion. This kind of increasing grounding of constructional meaning in the speaker's perspective and attitude is a type of metonymisation that Traugott (1989, 2010b) and Traugott and Dasher (2005) call subjectification (cf. Paradis, 2011).

While metonymisation explains *how* language acquires new constructions, it does not strictly specify *why* it does so, that is, the motivation for change. Traugott and Dasher (2005) argue that language change is motivated not by an internal process operating on the conceptual level of meaning in language, as is the case with metonymisation, but by what happens externally in interaction between conversational participants. Specifically, it is driven by the strategic decisions and moves that speakers make in interaction and the subsequent uptake of the negotiated meaning by the addressee. Paradis (2011) notes that the cognitive mechanism of metonymisation is in fact contextually motivated, having to do with "communicative economy, flexibility in speaker-hearer negotiation and the desire to express oneself at the adequate level on the scale of clarity and specificity" (p. 63). As we saw in Section 2.1.2 above, however, these ideas are only starting to be recognised and appreciated in CxG. This means that they are even more underdeveloped in DCxG, which lacks a solid theoretical basis for dealing with the role of interaction and social processes in constructionist change.

This shortcoming is overcome if we complement the semiological focus of DCxG with insights from a model of semantic change that takes the interactive function as its main focus of interest, namely the Invited Inferencing Theory of Semantic Change (IITSC; Traugott & Dasher, 2005). IITSC draws on the principle that, in communication, speakers tend to implicate more than what is said and addressees

tend to infer more than what was said (Traugott, 2018b, p. 23). It postulates that language change is motivated by the pragmatic strengthening of invited inferences in the case of which the speaker evokes implicatures and invites the addressee to infer them in the innovative way. Change takes place when the addressee replicates the innovation in the speech community and when the new meaning becomes conventionalised across populations of speakers and established in certain discourse contexts.

Pragmatic inferencing is also at the heart of the development of the subjective *jestli* in spoken Czech. Fried (2009) argues that the reason why the metonymic transfer of uncertainty takes place in the first place is because of the pragmatic strengthening of the meaning potential of *jestli* in indirect *yes–no* questions. The meaning potential is to imply the availability of multiple alternatives from which the addressee can choose: "[i]f there is a reason to ask, there is clearly uncertainty about the facts" (Fried, 2009, p. 288). The inference is consistent with the high frequency of the verb *I don't know* in clausal *jestli*-patterns as mentioned above. Change takes place when speakers exploit this pragmatic implicature to achieve a particular communicative effect, that is, to express their tentative opinion, and when the subjective potential of the indirect *yes–no* question becomes the conventional meaning of the new *jestli*-pattern.

Recently, Traugott (2018a, 2018b) has suggested two improvements to IITSC. The first improvement concerns the rethinking of invited inferences in terms of three types of inference: (i) constructional, (ii) discourse-structuring and (iii) turn-taking (Traugott, 2018b). While constructional inferences are associated with specific constructions, discourse-structuring and turn-taking inferences relate to interactional discourse more generally. The former are concerned with coherence and what in the utterance is foregrounded or backgrounded, and the latter pertain to particular points in interaction where transitions from one turn to another are likely to happen.

The second improvement concerns the interpretation of invited inferences as providing direct links to general conceptual domains in the constructional network (Traugott, 2018a). Specifically, Traugott (2018a) argues that pragmatic implicatures do not only arise in the syntagmatic flow of speech but also through analogical association of a construct with extant abstract constructional schemas. When speakers use a new expression, they instantiate certain extant schemas and, in so doing, simultaneously expand the functional range of the expression and the inventory of the general schema (Traugott, 2018a, p. 45). Importantly, linguistic expressions are multifunctional and require constructional networks that involve multiple dimensions: vertical, horizontal and external/multidimensional. First, vertical networks include multiple inheritance structures where lower-level constructions inherit properties from several higher-level schemas (Goldberg, 1995, 2006). Second, horizontal networks reveal that relationships between schemas are non-discrete and characterised by continuities and proximities of different kind and

strength (Traugott, 2016; Van de Velde, 2014). Finally, external/multidimensional networks create distant links between a construction and the domains that are external to it (Fried & Östman, 2005).

To illustrate a development that builds on all three types of network, Traugott (2018a) tracks the development of the discourse marker *after all* in English since the mid-19th century as illustrated in Figure 2.2. Traugott (2018a) distinguishes between two senses of *after all*, which are given in the bottom right corner of Figure 2.2. The first sense has a justifying meaning (IDM; 'my reason for saying X') and occurs in a non-final position of an utterance, (5), and the second sense has a concessive meaning (CDM; 'despite what was/might be expected') and occurs in a final position of an utterance, (6). The discourse markers in the examples are given in bold.[12]

(5) Europe … feared a tough response would mean a new cold war, for which none on the continent had an appetite. **After all**, the West had done very little after Russia invaded Georgia in 2008. (Traugott, 2018a, p. 29)

(6) she realized where all this was heading, and that it wasn't a movie **after all**. It was real. (Traugott, 2018a, p. 31)

As can be seen in Figure 2.2, the two senses of *after all* are connected to each other by a solid horizontal link. This is a polysemy link that signifies strong functional overlap between the senses. The overlap concerns the tendency for the justifying sense to implicate possible objections and counterarguments (i.e., concessive meanings). The vertical link above the two senses indicates that both of them are instances of the higher-level discourse marker (DM) schema. The schema incorporates metatextual markers that signal "some kind of relationship between clauses/utterances" (Traugott, 2018a, p. 27). The meaning of the DM schema is more restrictive than the meaning inherited from the more abstract domain of pragmatic markers (PM). The vertical link between the two domains suggests that discourse markers inherit from the PM schema pragmatic, non-contentful meanings and the tendency to take scope over the whole clausal complement. The fact that *after all* either precedes or follows the clausal complement is a property shared by both the DM schema and the PM schema. The curved lines in Figure 2.2 represent more distant, multidimensional links to external domains. While only the justifying sense links to causality, and particularly the mode of reasoning, both senses have external, multidimensional links to modality (concession but also epistemicity). For a more comprehensive overview of Figure 2.2, including links not directly relevant to the discussion here, see Traugott (2018a).

[12] Example (5) is taken from the Corpus of Contemporary American English and example (6) is from the Corpus of Historical American English.

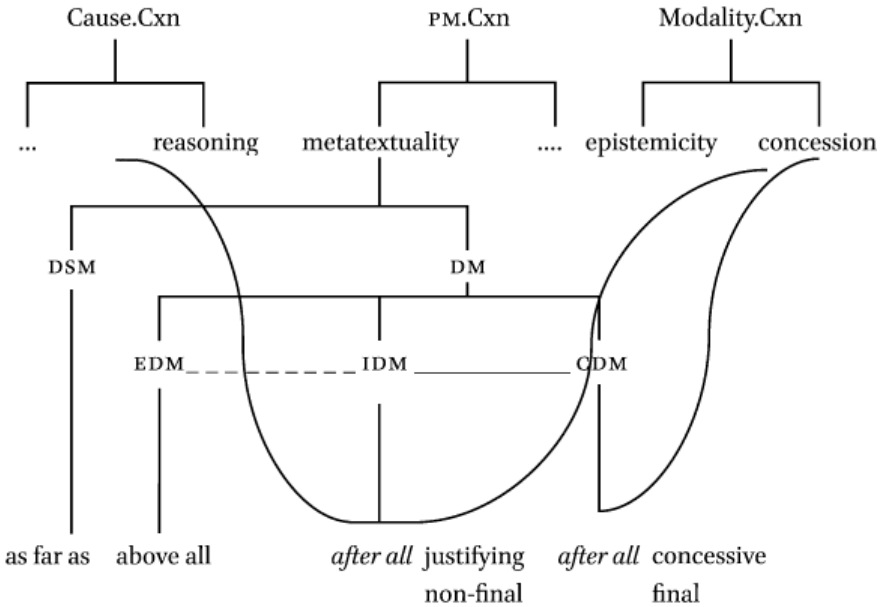

Figure 2.2. Partial network of the development of the English discourse marker *after all* since the mid-19th century (Traugott, 2018a, p. 44)
The vertical lines represent vertical inheritance structures (Goldberg, 1995, 2006), the horizontal lines represent functional overlaps between the constructions (Traugott, 2016; Van de Velde, 2014), and the curved lines represent multidimensional links to external domains (Fried & Östman, 2005). The abbreviations are as follows: Cxn = construction; PM = pragmatic marker, DSM = discourse structuring marker; DM = discourse marker; EDM = elaborative discourse marker; IDM = inferential discourse marker; CDM = contrastive discourse marker.

Article 4 proposes a partial constructional network of the development of the reactive *what-x* construction in English (see Figure 2 in the article). The network combines aspects from vertical and horizontal network models, but it does not provide links to external schemas. This is due to the relatively narrow focus of the study on constructions involving *what* only and not because these links do not exist. On the contrary, previous research on *what*-constructions has shown that *what* forms part of a complex web of relationships that is multidimensional and incorporates other related expressions, too. For example, the pragmatic marker *what*, which plays an important role in the development of the reactive *what-x* construction as shown in Article 4, is often discussed together with the pragmatic marker *why* (e.g., Blake, 1996; Brinton, 2008, 2017; Lutzky, 2012a, 2012b; Östman, 1981; see also Culpeper & Kytö, 1999 and Jucker, 2002 for descriptions of either one of the markers).

On the one hand, the markers are characterised by considerable functional overlap such as the expression of surprise, contempt and intensification; on the other hand, they differ from each other in important ways. For example, Lutzky (2012b) reports that, in her sample of Early Modern English drama texts (1500–1760), *why* is almost twice as frequent as *what* and it also conveys meanings not associated with *what*, such as the expression of disagreement and opposing views. These differences are

interesting because they seem to correlate with some of the findings of Article 4 about the reactive *what-x* construction. The findings are that the construction has become more frequent in recent history and that there has been a rise of a dialogic function that conveys opposition and contrast. It may therefore be the case that the changes are at least partly due to the increased productivity of the pragmatic marker schema, of which *why* plays an important role, and the external influence of the schema on the reactive *what-x* construction. It is important to note that these observations are not based on empirical evidence. The goal has simply been to demonstrate the depths to which one can go in diachronic analysis with the tools and mechanisms provided by the combination of DCxG and IITSC.

2.2 Stance-taking and intersubjective engagement

What the constructions investigated in this thesis have in common is that they are all, albeit to different degrees, used to express speaker stance. Stance-taking is a broad concept in Cognitive-Functional Linguistics that incorporates aspects of subjectivity and evaluation, both of which are essential in human life. Benveniste (1971) states that "language is marked so deeply by the expression of subjectivity that one might ask if it could still function and be called language if it were constructed otherwise" (p. 225). Englebretson (2007) notes that, while subjectivity refers to self-expression more broadly, evaluation takes a more focused approach to subjectivity vis-à-vis entities and propositions in the physical world. It is concerned with (i) how people express their opinions, viewpoints and attitudes towards objects, states and events, (ii) their assessments of the certainty and limitations of propositions and (iii) the comments that people make on the discourse itself (e.g., Biber, Johansson, Leech, Conrad, & Finegan, 1999; Chafe & Nichols, 1986; Fuoli, 2017; Hunston & Thompson, 2000; Kärkkäinen, 2003; Marín-Arrese, 2015; Nuyts, 2001; Palmer, 2001; Scheibman, 2002; Simaki, Skeppstedt, Paradis, Kerren, & Sahlgren, 2017).

Stance-taking also fulfils an intersubjective function. When people take a stance with respect to entities and propositions in the world, they do not do so in a vacuum. Instead, stance-taking is inherently dialogic and evokes a particular intersubjective relationship between the interlocutors and the value positions that they advance. If the interlocutors share more or less the same value positions, they are positively aligned with each other; if their value positions are very different from each other, the opposite is the case. Either way, the interlocutors are always engaged in the intersubjective construction, negotiation and organisation of the way they see and act in the world. The definition of stance adopted in the thesis mirrors this multifunctional nature of stance.

> Stance has the power to assign value to objects of interest, to position social actors with respect to those objects, to calibrate alignment between stancetakers and to invoke presupposed systems of sociocultural value. (Du Bois, 2007, p. 139)

The topic of stance-taking has attracted considerable attention in recent years and a number of theoretical approaches have been proposed. In this thesis, I focus on two of them: APPRAISAL theory (Section 2.2.1) and Dialogic Syntax with focus on dialogic resonance (Section 2.2.2). While APPRAISAL theory forms the basis of Article 1, dialogic resonance provides the main theoretical foundation for Article 2. Both approaches are well equipped to account for the interactive and dialogic nature of stance; however, insights from the cognitive dimension are necessary for a more comprehensive understanding of stance in spoken dialogue.

2.2.1 APPRAISAL theory

Article 1 is based on APPRAISAL theory (Martin & White, 2005). APPRAISAL theory is a framework that has been widely adopted to study stance-taking and evaluation in mainly written registers (e.g., Bednarek, 2008; Carretero & Taboada, 2014; Fuoli, 2012; Fuoli & Hommerberg, 2015; Fuoli & Paradis, 2014; Hommerberg & Don, 2015; Hood, 2006; Hood & Martin, 2007; Lipovsky, 2013; Martin, 2000; Taboada & Carretero, 2012; White, 2003, 2012, 2015). The framework was developed within Systemic Functional Linguistics, which is a tradition that centres on the notion that linguistic structure is a reflection of three broad functions: ideational, interpersonal and textual (Halliday, 1994). APPRAISAL theory is a development of the interpersonal function, concerned with meanings by which speakers enact their complex and diverse interpersonal relations. Interpersonal meanings are conveyed in language by a range of evaluative expressions that in APPRAISAL theory are grouped together in hierarchically organised semantic/functional categories. The most general categories are ATTITUDE, ENGAGEMENT and GRADUATION. While all three categories are important for meaning-making, Article 1 is concerned with the APPRAISAL category that focuses specifically on the dialogic construction of intersubjective positioning, namely ENGAGEMENT.

The ENGAGEMENT category relates closely to the notion of dialogicity as discussed in Section 2.1.2 above. Specifically, it departs from the view that all verbal performance, whether spoken or written, is a response to what has been said before and an anticipation of what will be said in response (Bakhtin, 1975/1981; Linell, 2009a, 2009b; Markovà & Foppa, 1990; Markovà, Linell, Grossen, & Salazar Orvig, 2007; Vološinov, 1929/1973). Accordingly, ENGAGEMENT expressions reflect the degree to which speakers engage with or take a stance towards the backdrop of other voices and alternative viewpoints, both as a response to previously taken stances and in anticipation of actual or potential addressees and the value positions that they advance. By using these resources, the speakers

"indicate greater or lesser degrees of personal investment in the proposition and mark it as more or less contentious, agreed-upon, or otherwise dialogistically problematic" (White, 2015, p. 5).

Figure 2.3 provides an overview of the ENGAGEMENT category. The division of the category into two further categories, monoglossia and heterglossia, reflects a distinction between utterances that are dialogically unproblematic and utterances that are dialogically problematic. First, monoglossic utterances are bare, categorical assertions that do not make reference to other voices and viewpoints that need to be recognised or engaged with in the current communicative situation. For example, the utterance *the banks have been greedy* (Martin & White, 2005, p. 100) does not contain any expressions that would set the utterance in conflict with alternative positions; that is, it is monoglossic and dialogically unproblematic (cf. White, 2015). Second, heteroglossic utterances are dialogically problematic and construe a heteroglossic environment of competing views and opinions that the current proposition addresses. Figure 2.3 shows that this heteroglossic diversity is further divided into two categories: EXPANSION and CONTRACTION. On the one hand, dialogic EXPANSION incorporates resources that "make available space for alternative positions by grounding the proposition in an individual, contingent subjectivity" (White, 2015, p. 6). In other words, they indicate that the speaker takes into consideration the possible existence of alternative positions in addition to the one that they themselves are advancing. The ENGAGEMENT expressions that belong to this category include various markers of epistemic modality (e.g., *may*, *probably*, *it's likely that*), evidentiality (e.g., *it seems*, *apparently*, *reportedly*) and attribution (*X claims that*, *some people believe that*). On the other hand, dialogic CONTRACTION closes down the space for dialogic alternatives, meaning that the speaker does not take into consideration any alternative viewpoints. The ENGAGEMENT expressions that belong to this category are very diverse and include, for example, markers of negation such as *no* and intensifiers with a clausal scope such as *indeed* and *obviously*.

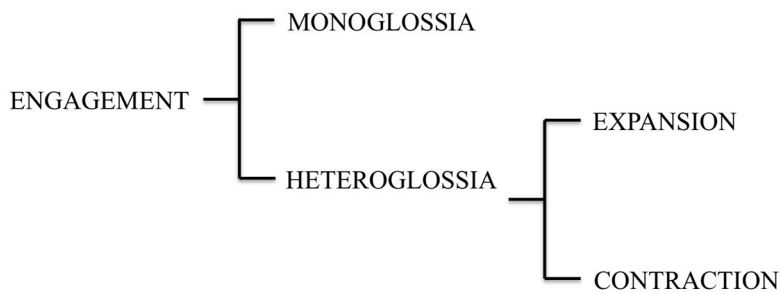

Figure 2.3. The APPRAISAL category of ENGAGEMENT (adapted from Martin & White, 2005)

Article 1 focuses on the family of first-person epistemic and evidential complement-taking predicate (CTP) constructions such as *I think* COMPLEMENT, *I suppose* COMPLEMENT and *I know* COMPLEMENT. Consider (7), repeated here for convenience from (1) above.[13]

(7) A: there's little buttons next to your seat and you can order yourself a burger and a pint or any drink you want
B: what and then a little robot brings it to you <pause/>
A: <vocal desc="laugh"/> **I think it's just a person** but maybe a robot **I think it's like a posh** you know it's it's a little bit more expensive than it would usually be to go to the cinema
B: mm

In the example, speaker A uses the CTP construction *I think* COMPLEMENT twice (in bold). In both cases, the construction includes the CTP *I think* and a complete or incomplete proposition within its scope, *it's just a person* and *it's like a posh* respectively. Traditional accounts in linguistics regard *I think*-type expressions as indicating a lack of commitment to the truth of the proposition and a low degree of reliability (Chafe & Nichols, 1986; Lyons, 1977; Nuyts, 2001; Palmer, 2001). They postulate that the reason why speaker A in (7) qualifies the propositions with *I think* is to signal that she is uncertain about her assessments. However, the APPRAISAL framework shifts our focus away from the epistemic status of *I think* to its dialogic meaning, which is to express dialogic EXPANSION. Martin and White (2005) argue that uncertainty is not "the primary, determining communicative motive" of *I think*, but the function of the CTP is to present the proposition as one out of a range of possible positions and, in so doing, evoke the expression of these dialogic alternatives.[14] Most first-person epistemic and evidential CTP constructions are considered to have an expansive function. One of the few CTPs with a contractive function is *I know* (e.g., *I know that the banks have been greedy*). The CTP is contractive because the proposition within its scope is represented as universally or at least widely held, and anyone who disagrees with the position would be seen as at odds with a generally agreed upon or known fact (Martin & White, 2005, p. 124).

While I agree with Martin and White (2005) that CTP constructions have dialogic meanings, Article 1 takes issue with the rigid treatment of the constructions as either always dialogically expansive or contractive. As established in Section 2.1.2 above, recent work on constructions has shown that linguistic expressions do not have fixed meanings, but they have meaning potentials that receive their final interpretation in

[13] Note that the example has been slightly shortened and simplified.

[14] Note that the fact that *I think* evokes the expression of dialogic alternatives does not necessarily mean that the alternatives are actually being expressed, as shown in (7). The final realisation of dialogicity is ultimately dependent on local, situated factors.

the dialogic context in which the expression occurs (Fried & Östman, 2005; Linell, 2009a, 2009b; see also Paradis, 2011). Therefore, it may be the case that dialogic EXPANSION is the core dialogic meaning of *I think*, but this does not mean that the CTP has the same meaning under all contextual conditions. Martin and White (2005, pp. 103–104) acknowledge that the dialogic force of ENGAGEMENT expressions may vary systematically in different contextual environments, registers and genres, but these conditions are never explicitly dealt with in their work. In Article 1, we seek to determine the factors that have the strongest effect on the dialogic meaning of CTP constructions with focus on *I think* COMPLEMENT. Importantly, the extension of APPRAISAL theory into spoken dialogue gives us access to factors that are not available in written registers such as prosody (see Section 2.1.2 above).

2.2.2 Dialogic resonance

The main theoretical foundation of Article 2 is Dialogic Syntax and particularly its central concept dialogic resonance (Du Bois, 2007, 2014; Du Bois & Giora, 2014). Dialogic resonance is not concerned with specific stance constructions, as is the case in APPRAISAL theory as discussed in the previous section, but it centres on a linguistic phenomenon that is important for meaning-making in spoken dialogue, namely when speakers selectively reproduce constructions from prior discourse to take a stance and to establish intersubjective engagement with each other. For example, the conversation in (1) in Chapter 1 above is full of constructions that persist across speaker turns and, in so doing, fulfil a particular intersubjective function (e.g., the reuse of the word *robot* by A in turn 15 to positively align with B's humorous question in turn 12). Much of the work on dialogic resonance so far has been carried out within conversation analytic and interactional linguistic approaches to spoken interaction, the main concern of which has been to determine the intersubjective functions that resonance has in discourse (see below; e.g., Dori-Hacohen, 2017; Maschler & Nir, 2014; Nir, 2017; Nir, Dori-Hacohen, & Maschler, 2014; Nir & Zima, 2017; Zima, Brône, Feyaerts, & Sambre, 2009). However, very little attention has been paid to the role of cognition and particularly automatic priming in resonance production. This section provides the motivation for combining insights from interactional linguistics and cognitive processing of speakers turns in dialogue in Article 2 (see Section 4.2 for a summary of the article).

Dialogic Syntax is a framework within Cognitive-Functional Linguistics that goes well beyond the study of the internal structure of independent sentences and instead considers linguistic structure to be a function of the dialogic juxtaposition of internally structured utterances in discourse. The framework is set in contrast to what Du Bois (2014) calls traditional linear syntax, the main concern of which is isolated, autonomous sentences disposed of any dialogic information about their occurrence in the larger discourse context. For example, the utterances in (8) and

(9), although taken from real-life conversations,[15] do not convey any information about, for example, the speakers, their motivation for making the statements, and the meaning affordances that the statements give rise to when placed in connected coherent speech. While the additive particle *either* in (8) creates an impression of the utterance as a convergent response to some prior turn, the function of the utterance in (9) is much less transparent.

(8) I don't know if she would either.

(9) He's still walking around.

The meanings expressed by the utterances become much clearer once the context for their occurrence has been included, as has been done in (10) and (11) respectively.

(10) ALICE: I don't know if she'd do it.
(0.6)
MARY: I don't know if she would either. (Du Bois, 2007, p. 160)

(11) JOANNE: yet he's still ^healthy.
He reminds me [of my ^brother].
LENORE: [He's still walking] ^around,
I don't know how ^healthy he is. (Du Bois, 2014, p. 368)

The example in (10) confirms our intuition that *I don't know if she would either* is used to express convergent alignment with the interlocutor's prior stance (*I don't know if she'd do it*). Example (11) reveals the opposite function. In the example, the utterance *he's still walking around* in Lenore's turn is produced in response to Joanne's *he's still healthy* in the previous turn. The identical framing of the utterances by *he's still* evokes the analogical inference that, in this particular context, the two constructions—the phrasal verb *walking around* and the adjective *healthy*—are in some kind of relation to one another. The specific inference is that this relation is one of divergence and that the constructions represent "two contrasting values on an ad hoc scale of health" (Du Bois, 2014, p. 369). Previous research has shown that dialogic resonance is a particularly fruitful way to express

[15] The examples are taken from the Santa Barbara Corpus of Spoken American English (Du Bois et al., 2000–2005). The transcription conventions that are important for understanding the examples in this section are as follows: the transcriptions are segmented by intonation units, full stops correspond to final intonation contours and commas to continuing intonation contours, prosodic prominence is represented by the caret (^), pause durations are measured in seconds, and overlapping speech is represented by square brackets (see Du Bois, Schuetze-Coburn, Cumming, & Paolino, 1993).

dialogically divergent meanings in a range of discourse contexts (e.g., Brône & Zima, 2014; Dori-Hacohen, 2017; Du Bois, 2007, 2014; Maschler & Nir, 2014; Nir et al., 2014; Sakita, 2006; Zima et al., 2009).

The examples above invite a perception of affinity and intersubjective engagement between the utterance pairs and, by extension, between the interlocutors. As noted by Du Bois (2007), "convergence and divergence of evaluative alignment are equally at home in the dialogic engagement of co-participants" (p. 174). This is because, in both (10) and (11), the speakers resonate with each other's lexical items, syntactic structure and intonation to create parallelisms across multiple dimensions of linguistic representation. The resulting parallelisms evoke analogical inferences that generate new meaning affordances and signal how a particular construction is to be interpreted at a given interactional moment. Therefore, the key unit of analysis in dialogic resonance is not a single construction but a diagraph, defined as "a higher-order, supra-sentential syntactic structure that emerges from the structural coupling of two or more utterances (or utterance portions), through the mapping of a structured array of resonance relations between them" (Du Bois, 2014, p. 376). A diagraph is not only the analyst's representation of the structure of utterance sequences but also the speakers' mental representation of the emergence of dialogic resonance in real time (Du Bois, 2014, p. 368). Example (12) is a diagraph of the resonating stance-taking sequence in (11). The diagraph illustrates the source of the syntactic particularities present in the individual utterances and how these particularities co-exist with the generality and similarity that unite the utterances into a single higher-order structure. The dialogic juxtaposition of *healthy* and *walking around* in (12) facilitates the perception of two otherwise seemingly unrelated constructions, an adjective and a phrasal verb, as categorically equivalent.

(12) Du Bois (2014, p. 368)

JOANNE:	yet	he	's	still	^healthy	.
LENORE:		he	's	still	walking ^around	,

This kind of dynamic creation of equivalence between constructions is called *creative resonance*, set in contrast to *pre-existing resonance*, which is systematic and relies on well-established aspects of language (e.g., repetitions and the additive particle *either* in (10) above). While it is true that all utterances necessarily exhibit both types of resonance relations, there are differences in the way that speakers frame the focal elements or the gist of the utterances. For example, despite the fact that the utterances in (12) are framed by pre-existing means (the phrase *he's still*), the relation between the focal elements *healthy* and *walking around* is creative and requires considerable contextual motivation to be understood as expressing divergent alignment (cf. Paradis & Willners, 2011).

The view of resonance and linguistic alignment adopted by Du Bois (2014) coincides with the general thesis of Clark (1996) that language use is a form of joint action. According to Clark (1996), joint actions require a minimum of two participants who coordinate their individual actions to achieve a common goal. The participants' orientation towards the common goal is intentional and involves active monitoring and inferring of each other's intentions and assumptions. A somewhat different approach to linguistic alignment and coordination is taken in cognitive psychology and particularly in the work of Garrod and Pickering (2004) on the interactive alignment model (see also Garrod & Pickering, 2015; Pickering & Garrod, 2004, 2005). The interactive alignment model contrasts with Clark's (1996) language-as-joint-action model in that it views linguistic alignment as a mechanistic process facilitated by automatic priming. Garrod and Pickering (2004) argue that the priming and enhanced reuse of words, sounds, grammatical forms and meanings at the lower levels of linguistic representation by extension lead to alignment at the critical level of the situation model, where information about key aspects like space, time, causality, identity and intentionality is represented. It is through alignment at the situation level that participants come to understand the conversation in the same way. Du Bois, Hobson, and Hobson (2014) acknowledge the role of automatic priming in resonance production, but they do not equate them. Instead, the authors propose that "priming and resonance are better understood as distinct phases within a larger 'resonance cycle'" (Du Bois et al., 2014, p. 435), where structural parallelisms arise through the cognitive facilitation of certain linguistic structures (priming) and the selective reproduction of the structures for strategic meaning-making and intersubjective positioning (resonance). Similar speculations about the close relationship between priming and resonance have been made elsewhere (e.g., Nir & Zima, 2017, p. 7) but with very little empirical evidence to support them (but see Brône & Zima, 2014; Sakita, 2006).

Article 2 combines insights from interactional linguistics and cognitive processing of speaker turns in dialogue to determine how intersubjective processes and priming mechanisms interact when speakers resonate with each other's stances in spoken dialogue. While the former are explored through the intersubjective functions that resonance has in discourse (convergent vs. divergent), the latter are operationalised in a novel way for dialogic resonance, namely by measuring the time it takes for speakers to respond to the interlocutor's prior stance. The assumption we make in Article 2 is that the timing of turns in conversation is reflective of the amount of cognitive processing that the speakers are required to do in the moment. In this way, we can determine the extent to which automatic priming plays a facilitative role in the larger resonance cycle and how it interacts with intentional processes of meaning-making (for a more comprehensive overview of previous work on the timing of turns, see Article 2).

3. Data and methods

In addition to making a theoretical contribution to the study of spoken dialogue, the present thesis also has a practical aim. The aim is to compile a brand new corpus of spoken British English, the London–Lund Corpus 2, modelled on the same principles as the first London–Lund Corpus. Together, the corpora make up the London–Lund Corpora. The four articles included in the thesis are all based on corpus methods and they all draw data from either one or both of the London–Lund Corpora. This chapter describes the methodological considerations made in the articles. In the first part of the chapter, in Section 3.1, I introduce corpus linguistics as a methodological approach, and discuss relevant aspects of manual corpus annotation (Section 3.1.1) and the combination of corpus and experimental methods (Section 3.1.2). The second part, Section 3.2, introduces the London–Lund Corpora: the London–Lund Corpus 1 (Section 3.2.1) and the London–Lund Corpus 2 (Section 3.2.2). Finally, Section 3.2.3 discusses the challenges involved in achieving a sufficiently high degree of comparability between the London–Lund Corpora.

3.1 Corpus linguistics

Corpus linguistics is "the study of language on the basis of text corpora" (Aijmer & Altenberg, 1991, p. 1). Text corpora are defined as machine-readable collections of spoken, written or multimodal texts representative of a language variety or context of use. The tradition of using observed language data for linguistic analysis goes back a long way to the first half of the 20th century (e.g., Boas, 1940), but it was not until the middle of the century that corpus linguistics started to undergo rapid development and expansion (for an overview of the history, see McEnery & Hardie, 2012). Advances in computing meant that, by the 1960s, computers were powerful enough to store and process large amounts of textual data that defy analysis by hand and eye alone. Since then, numerous tools, software and corpora have been developed to facilitate quick and reliable investigations of real language data in a variety of contexts, registers and genres. Investigations are usually carried out using a combination of qualitative and quantitative analyses. While the former involve careful, interpretive analyses of words (or strings of words) in context, the latter present the frequency and distribution of the words in the corpus. Today, corpora

are indispensable resources in any area of linguistics that adopts a usage-based perspective and regards language use as the focus of empirical study (see Section 3.2 for more detailed information about corpora and their compilation).

Corpus methods are particularly suitable for studying spoken dialogue, as is the case in the present thesis. Provided that they have been transcribed carefully and with attention to detail, corpora based on conversational data give access to a record of language in its most natural form. Moreover, they provide important insights into the properties and structure of conversation. Compared to many other methodological approaches, spoken corpora also capture the dynamic, complex and context-specific nature of natural language use in a way that methods such as traditional sociolinguistic interviews, surveys and experiments do not. Experimental work, in particular, is increasingly used to study spoken dialogue, for instance, in cognitive psychology and psycholinguistics (e.g., Bögels, Kendrick, & Levinson, 2015; Bögels & Torreira, 2015; Corps, Pickering, & Gambi, 2018; Magyari, De Ruiter, & Levinson, 2017; Riest, Jorschick, & De Ruiter, 2015). These studies have been successful in determining the cognitive processes that occur in participants' minds when they are engaged in controlled conversation with another person or with a computer, but the studies also raise questions about the extent to which the experimental results mirror real language use. For example, in their analysis of the timing of responses to polar questions combining corpus and experimental methods, Meyer, Alday, Decuyper, and Knudsen (2018) found that the experimental participants responded slower than the speakers in the corpus. The authors concluded that this may be due to the different sensory, situational and pragmatic factors that encourage people to respond faster in 'real-life' settings than under strict experimental conditions. Therefore, one needs to be careful in generalising experimental results to situations outside the laboratory (but see Section 3.1.2 for the benefits of combining experimental and corpus work to study spoken dialogue).

In addition to empirical, observational research methods such as corpus and experimental work, linguistic analysis can also be based on introspection and the analyst's own intuitions about language (Chomsky, 1965). In fact, Adolphs (2008) observes that much of the work in pragmatics, which is concerned with language in use, "has been based on invented examples of utterances based on native speaker intuition" (p. 21). The problem with this approach is that these examples are often decontextualised and lack important dialogic information about the occurrence of the utterances in the larger discourse context. There is also the problem of introspective decision-making, which is an inherently subjective process that relies on intuitions that the native speaker may not share with others. However, intuition is an important part of corpus methods that comes into play at different points in time. One such point is the manual annotation of the corpus examples, dealt with in the next section together with an overview of how the issue of subjectivity was addressed in the articles included in the thesis.

3.1.1 Manual corpus annotation

The analysis presented in the articles is based on manual corpus annotation. This means that the constructions investigated were identified, either through searches of the corpus texts or by reading the texts in full, and manually classified into mutually exclusive analytical categories. While it is true that spoken dialogue may be seen as resisting either/or classification (see, for example, Macken-Horarik & Isaac, 2014), it is also the case that making exclusive choices about linguistic phenomena is an inevitable part of corpus analysis, if the aim is to detect patterns in the data that would otherwise go unnoticed. Manual corpus annotation, in particular, has been widely adopted in the analysis of evaluative language in mainly written registers (e.g., Bednarek, 2008; Carretero & Taboada, 2014; Fuoli, 2012; Fuoli & Hommerberg, 2015; Hommerberg & Don, 2015; Lipovsky, 2013). The method is set in contrast to corpus-based methods where evaluative expressions are classified using (semi)-automatic techniques (e.g., Biber, 2006; Fuoli, 2017; Hyland, 2005; Kaltenbacher, 2006). Although the latter are less time-consuming and can be applied to more data, manual corpus annotation is better suited for the analysis of semantic/functional phenomena, as is the focus of attention in this thesis. As noted by Xing (2019), manual corpus annotation "produces more accurate and reliable results that better reflect the practical functions of evaluative expressions in discourse" (para. 2).

However, accuracy and reliability are not achieved automatically by doing manual corpus annotation. This is because the manual coding of semantic/functional aspects of stance-taking and intersubjective engagement is an inherently subjective process. For example, analysts may come across stance constructions that do not match the definitions and examples provided in the literature, or they may find that the boundaries between the categories provided by the framework are not always clear-cut and thus give rise to multiple interpretations. If not adequately dealt with, these issues can have serious consequences for the corpus results. Fuzzy annotation criteria, even if applied to the very same dataset, can lead to different outcomes and raise questions about the credibility of corpus linguistics as a scientific method. In order to prevent this from happening, corpus linguists must take steps to improve the reliability and replicability of the manual annotation procedure.

An important step in this regard is taken in Fuoli's (2018) stepwise method for annotating APPRAISAL. The method offers practical solutions to the challenges involved in the classification of evaluative expressions into APPRAISAL categories in order to optimise the reliability, replicability and transparency of the annotation procedure. Although initially designed for APPRAISAL theory, the ideas promoted in the model can be extended to any framework that relies on the manual annotation of semantic/functional phenomena. This is illustrated in the articles included in this thesis, all of which are directly informed by Fuoli's (2018) model. Below, I will present the model and demonstrate how it was applied in each study.

Figure 3.1 shows the sequential steps of Fuoli's (2018) stepwise model. The first step involves defining the scope of the research project and creating a preliminary version of the annotation scheme that contains all the categories and subcategories used in the annotation process. Second, the analyst is advised to select and configure a dedicated annotation tool to "help make the annotation process faster and more systematic" (Fuoli, 2018, p. 248). The third step involves making the annotation scheme explicit in a context-specific annotation manual that other researchers can review and use. Steps 4 and 5 are carried out in a loop, as indicated by the feedback arrow in Figure 3.1. The aim is to assess the reliability of the data derived from the annotations and refine the annotation manual based on the results of the reliability test(s). This should be done until a satisfactory level of agreement between or within the annotators has been achieved. Then, the annotation of the whole corpus is carried out in step 6, followed by a qualitative and/or quantitative analysis of the data using more or less sophisticated statistical techniques in step 7.

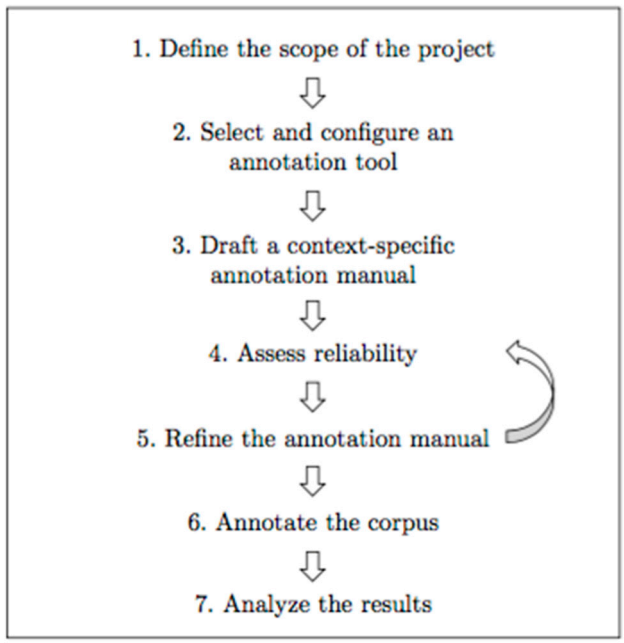

Figure 3.1. Fuoli's (2018, p. 247) stepwise method for annotating APPRAISAL

The articles included in the thesis make use of the steps in Figure 3.1 to varying degrees. First of all, they are all grounded in well-defined annotation criteria that are closely related to the research questions of each study and the type of conversational data used. The question of which annotation tool to use proved to be relevant for the annotations carried out in Article 2 about dialogic resonance and the

duration of turn transitions, due to the multimodal nature of the task at hand. Specifically, the annotation involved classifying the corpus examples into relevant resonance categories and measuring the time between speaker turns. Therefore, the decision was made to carry out the task in the multimodal annotation tool ELAN (Wittenburg, Brugman, Russel, Klassmann, & Sloetjes, 2006) that allows for a multi-layered description of digital research data.

The annotation criteria were documented in detailed and context-specific annotation manuals in Articles 1 and 2 that were mainly concerned with the annotation of semantic/functional aspects of stance-taking and intersubjective engagement. The manuals are available for inspection in the appendices of the respective articles.[16] They provide important information about the annotation process, including the outline of the annotation scheme, definitions and illustrative examples of the (sub)categories used, instructions on how to carry out the task and how to deal with ambiguous and poly-functional cases. The annotation of the duration of turn transitions in Article 2, in particular, required us to establish strict guidelines on how to carry out the measurements so as to control for the effect of confounding variables. To assess the reliability and replicability of the annotation process, the annotation criteria developed were applied to the corpus examples by two independent annotators. The two sets of annotations were then compared by means of the Cohen's chance-corrected *kappa* test, and high agreements were achieved in all cases and across all rounds. This suggests that the annotation criteria were clear and became better defined each time.

No annotation manuals are available for Articles 3 and 4 about the different types of *what*-constructions including the reactive *what-x* construction. The reason for this is that these annotations were mainly based on formal criteria, which are easier to define and follow. For example, the determining factor in distinguishing between a standard interrogative *what*-construction (e.g., *what are you up to these days*) and the reactive *what-x* construction (e.g., *what and then a little robot brings it to you*) is whether or not *what* is followed by a finite verb form. This said, the annotations in Articles 3 and 4 still followed rigorous annotation criteria, and problematic cases were discussed and resolved together by the authors. Moreover, all instances of the reactive *what-x* construction found in the data, and how they were classified in terms of dialogic function, are available for inspection in the appendix of Article 4.

Finally, all the studies involved a two-step analysis where the frequencies of the annotation categories were first calculated and compared, followed by a careful and qualitative interpretation of the individual occurrences. Statistical analysis of the quantitative information was deemed important in cases where the sample sizes were sufficiently large and where it was necessary to determine whether differences

[16] The annotation manual of Article 1 is available in the form of an appendix as supplementary material to the web-based version of the article. See https://www.euppublishing.com/doi/suppl/10.3366/cor.2016.0092

between the categories are due to chance or whether they are statistically significant. This was not the case in Article 1 where the corpus annotations were used to generate hypotheses for a subsequent laboratory experiment (see Section 3.1.2), or in Article 3 where the frequencies of the annotation categories were deemed too low to permit significance testing. By contrast, the annotations in Articles 2 and 4 were subjected to more or less sophisticated statistical techniques. The techniques used in Article 2, for instance, belong to the family of mixed-effects regression analyses. According to Gries (2013, p. 100), mixed-effects regression analyses do justice to the multi-faceted nature of language and the complexity and noisiness of data obtained from corpora. Specifically, they capture the effect of several factors at the same time and account for the tendency for corpus data to be distorted by individual differences between speakers and corpus texts (Baayen, 2008; Baayen, Davidson, & Bates, 2008; Gries, 2013, 2015). Therefore, the analyses are well suited for Article 2, which involved multiple factors and contained speaker-specific and text-specific idiosyncrasies that needed to be controlled for.

3.1.2 The combination of corpus and experimental methods

Corpus methods are useful for answering questions about the communicative practices that speakers draw on in a variety of conversational contexts, but they are less suited for tapping into addressees' reactions to these practices. This is because corpus data do not necessarily provide falsifiable evidence about which aspects of the utterances are relevant for the addressee's interpretations. This gap is filled by experiments that have a very strict design and where confounding variables are adequately dealt with in a controlled laboratory setting (Tummers, Heylen, & Geeraerts, 2005, p. 230). However, experiments may not be the most appropriate method for studying spoken dialogue, which is dynamic, complex and context-specific. In fact, they seem to be counter-intuitive to many cognitive-functional linguists who see the study of language as "a study of (other) human beings and their cultures, rather than physical objects" (Divjak, Levshina, & Klavan, 2016, p. 458). However, Divjak et al. (2016, p. 454) also warn against claiming superiority of one method over another, and recent years have seen an upsurge in studies that triangulate data from corpus and experimental methods to gain a more complete and falsifiable understanding of linguistic phenomena (e.g., Arppe, Gilquin, Glynn, Hilpert, & Zeschel, 2010; Arppe & Järvikivi, 2007; Gilquin & Gries, 2009; Jones, Murphy, Paradis, & Willners, 2012; Klavan & Veismann, 2017; Meyer et al., 2018). It is for these reasons that Article 1 combines a qualitative corpus-based analysis with a controlled laboratory experiment to test the effect of several factors on the dialogic meaning of CTP constructions with focus on *I think* COMPLEMENT.

According to Arppe et al. (2010, p. 4), one of the major challenges of combining corpus and experimental methods is to ensure comparability of the

operationalisations of research questions, hypotheses and associated concepts. Similarly, Meyer et al. (2018) argue that "researchers drawing on both experimental and corpus work should strive, as much as possible, to compare like with like" (p. 4). The most important consequence of not achieving comparability between the methods is that they do not yield convergent results, and even if they do, they may not address the same empirical question. Below, I will explain how this issue was addressed in Article 1 and outline the steps that were taken to ensure a sufficiently reliable level of comparability between the methods.

The first step was to ensure comparability of the research questions and hypotheses that provided the basis for the corpus-based analysis and the laboratory experiment. To achieve this, we used the corpus-based analysis to generate hypotheses for the experiment. The corpus results helped us identify the one CTP construction that displayed the most diverse contextual patterns and was therefore most susceptible to experimental manipulation, namely *I think* COMPLEMENT. The three contextual factors tested in the experiment—interlocutor status, the presence of a contractive marker and the prosodic marking of the CTP—were chosen because they correlated most strongly with the dialogic meaning of CTP constructions in the corpus-based analysis (see Table 3.1 for the complete experimental design of Article 1). The assessment of the strength of the correlation was made possible by the manual annotation of the CTP constructions as expressing either dialogic EXPANSION or CONTRACTION and, additionally, by rating the constructions on a scale from 1 to 6 as relatively more or less dialogically contractive or expansive (1 = very contractive; 6 = very expansive). For example, the corpus results showed that *I think* COMPLEMENTS were annotated as very expansive if the pitch accent was on the verb, relatively less expansive/more contractive if the accent was on the pronoun and very contractive with no accent on *I think*. The same pattern is reflected in the hypothesis generated about the effect of prosody in the experiment, where utterances in which *I think* received an accent on the verb were expected to be perceived as most expansive, followed by utterances with accent on the pronoun and then with no accent on *I think* (see Table 3.1 for examples of the three values of the prosodic marking of the CTP, and Section 4.1 for hypotheses related to all three factors tested in the experiment).

Table 3.1. The experimental design used in Article 1
The three factors that were tested were interlocutor status (equals vs. disparates), presence or absence of a contractive marker, and prosodic marking of CTP: no accent, accent on pronoun and accent on verb. The examples are illustrative.

	Equals	
	Without contractive marker	With contractive marker
No accent	I think you're wrong	I think you're *clearly* wrong
Accent on pronoun	*I* think you're wrong	*I* think you're *clearly* wrong
Accent on verb	I *think* you're wrong	I *think* you're *clearly* wrong
	Disparates	
	Without contractive marker	With contractive marker
No accent	I think you're wrong	I think you're *clearly* wrong
Accent on pronoun	*I* think you're wrong	*I* think you're *clearly* wrong
Accent on verb	I *think* you're wrong	I *think* you're *clearly* wrong

The second step was to ensure comparability of the utterances extracted from the corpus and the experimental stimuli. According to Meyer et al. (2018, p. 3), corpus and experimental work that are meant to address the same research question should also make use of comparable utterances. This is, however, not always easy to accomplish because corpora usually do not provide access to a sufficiently large number of relevant utterances, and it is not always clear which properties of the utterances are relevant for the empirical question (Meyer et al., 2018, p. 3). In our experiment, the participants were asked to read and listen to 36 imaginary conversations with another person in which the person expressed her opinion on something (the target utterance). The conversations were preceded by a short description about the context in which the conversation occurred. Comparability across the utterances was achieved by basing the experimental stimuli on naturally attested examples from the corpus in order to retain at least a certain degree of naturalness of the stimuli. This said, it was necessary to make several changes to the corpus examples to control for the influence of confounding variables on the participants' reactions. For example, instead of using the original recordings, which were often carried out in noisy environments, all the conversations in the experiment were recoded with a native speaker of British English in the anechoic chamber of the Humanities Lab at Lund University. Furthermore, in addition to manipulating the target utterances for the three factors mentioned above, we removed any redundant information (e.g., long pauses, incomprehensible words, repetitions), and couched the utterances in a variety of situational contexts (e.g., informal conversations, business meetings, university tutorials). Table 3.2 brings one example of the kinds of changes that were made to the original corpus example before it was presented to the participants (see Section 3.2.1 for the transcription and markup conventions used in the corpus).

Table 3.2. Example of an experimental stimulus used in Article 1
The first row presents a short description of the conversational context, the second row presents the experimental stimulus with the target utterance (enclosed within double asterisks), and the third row presents the occurrence of the target utterance in the corpus.

Context	You are working in human resources in London. You and your boss Mrs Chambers are discussing why there are not so many people taking part in the company's social gatherings.
Experimental stimulus	MRS CHAMBERS SAYS TO YOU: People don't seem to be interested in spending their Friday nights with the people they spend the whole week together with. There's so much more to do in the city. ** I think it's obviously because we live in London **.
Original corpus example	I th\ink partly th/ough # that ((syll)) th\/at can be explained # by the fact that we're at university in L\ondon

The third step was to ensure comparability of the associated concepts. According to Arppe et al. (2010, p. 5), this can be achieved by applying the same theoretical formalism and following the same definitions of the associated concepts in both methods. In our experiment, the ENGAGEMENT categories of dialogic EXPANSION and CONTRACTION were operationalised in a way that did not compromise the intersubjective nature of ENGAGEMENT, but made the categories and their definitions more accessible to the participants. Specifically, the participants were asked two questions.

1. To what extent would the person take a different opinion from you into consideration?
2. How comfortable are you in expressing a different opinion?

These prompters address two different facets of ENGAGEMENT. The first question takes the perspective of the fictional character in the experiment and her openness to consider a different opinion, while the second question turns the focus to the participant and his/her willingness to disagree with the opinion.

In addition to ensuring a high degree of comparability between the methods as discussed above, the corpus-based analysis and the experiment in Article 1 also provide convergent evidence about the effects of the three contextual factors on the dialogic meaning of *I think* COMPLEMENT. This further suggests that a sufficiently reliable level of comparability was achieved between the methods. Therefore, the article demonstrates the feasibility of extending the analysis of spoken dialogue into the domain of experimentation, and capturing the relative importance of several explanatory factors on the addressees' reactions to discourse phenomena, as long as these insights are complemented with naturally attested examples from a corpus.

3.2 London–Lund Corpora

This thesis reports on the compilation of a brand new corpus of spoken British English, the London–Lund Corpus 2 (LLC–2), with data from 2014–2019. The compilation of the corpus comes nearly 50 years after the release of the world's first spoken corpus, the London–Lund Corpus (LLC–1), recorded in the 1950s–1980s. Together, the corpora make up the London–Lund Corpora and form the basis of all the articles included in the thesis. In what follows, I will present the background and rationale for compiling LLC–2 as part of my thesis project.

The main reason for compiling LLC–2 is the lack of publicly available spoken corpora in English compared to corpora based on written sources. This is largely due to the considerably higher cost and effort associated with spoken corpus compilation, which necessarily involves manual transcription of the recordings (McEnery, 2018, p. 11). A rough estimate made by Burnard (2002) is that "the cost of collecting and transcribing in electronic form one million words of naturally occurring speech is at least 10 times higher than the cost of adding another million words of newspaper text" (p. 6). The imbalance in the availability of spoken and written corpora is one of the contributing factors to the so-called "written language bias" (Linell, 2005) in the language sciences, and the development of linguistic theories that are deeply influenced by the mechanisms and structures of writing rather than speech. Furthermore, comparisons between spoken and written corpora have shown that spoken language contains grammatical features and discourse phenomena that are inaccessible, rare or which function differently in written language, such as discourse markers, response tokens, turn transitions and prosodic information (see Carter & McCarthy, 1995 and Carter & McCarthy, 2017 for further differences between spoken and written language).

Despite the practical challenges of compiling a spoken corpus, a number of them have emerged and been made publicly available over the past few decades. Here, I focus on corpora that contain, either in part or exclusively, everyday face-to-face conversation in English, as this is the text category used in the investigations in this thesis.[17] After the development of early corpora such as LLC–1, the 1990s saw the compilation of several spoken corpora. Perhaps the most well known of them is the British National Corpus (BNC), containing around 10 million words of everyday and task-oriented face-to-face conversation from 1991–1994 from across the UK. Other influential corpora from this time include the Santa Barbara Corpus of Spoken American English (SBCSAE) and the British component of the International Corpus of English (ICE–GB). The latter was later partly integrated into the Diachronic Corpus of Present-Day Spoken English (DCPSE), which also contains a comparable

[17] The corpora listed here are either freely publicly available or available after payment of a licence fee. Corpora that are not available to the wider academic community are not included (but see O'Keeffe & Adolphs, 2008 for an overview of both types of spoken corpora in English).

sample from LLC–1 (around 400,000 words from each corpus). More recently, Lancaster University and Cambridge University Press released the Spoken BNC2014 with data from 2012–2016, containing around 11 million words of everyday face-to-face conversation from across the UK (Love, Dembry, Hardie, Brezina, & McEnery, 2017).

While all the corpora mentioned above are based on conversational data and are therefore suitable for the study of spoken dialogue, they fail to meet other criteria important for this thesis. The combination of contemporary and diachronic analyses of spoken dialogue in the thesis means that the data have to come from two different corpora: (i) one of the corpora has to be new and (ii) the other corpus has to come from a different time period of the same variety of English. The first criterion is met by the Spoken BNC2014, which together with the first BNC is also a suitable candidate for short-term diachronic investigations. However, the timing of its release in late 2017 did not quite agree with my PhD schedule. DCPSE meets the second criterion, but the release of ICE–GB two decades ago (in 1998) makes it unsuitable for contemporary investigations. SBCSAE was not considered because it is not contemporary and because, to the best of my knowledge, no comparable corpus of contemporary spoken American English exists at the moment. This leaves us with LLC–1. As mentioned above, LLC–1 was recorded in the 1950s–1980s, which means that, similar to most other corpora mentioned above, LLC–1 is unsuitable for contemporary investigations. However, its age should also be seen as an advantage because, as the world's first corpus of spoken language, LLC–1 is the earliest available corpus for the study of spoken language change. Since no comparable corpus existed when I started my PhD in 2014, the decision was made to initiate the compilation of a new corpus of contemporary spoken British English, LLC–2. The following sections introduce LLC–1 and LLC–2 separately, followed by a comparison of the corpora.

3.2.1 London–Lund Corpus 1

LLC–1 grew out of collaborative work between the Survey of English Usage, launched in 1959 by Sir Randolph Quirk at University College London, and the Survey of Spoken English, led by Professor Jan Svartvik at Lund University. The aim of the Survey in London was "to provide the resources for accurate descriptions of the grammar of adult educated speakers of English" (Greenbaum & Svartvik, 1990, p. 11). This was achieved through the assembly and analysis of a one-million-word corpus of spoken and written British English, comprising 200 texts of around 5,000 words each. The computerisation of the spoken half of the corpus, or what came to be known as LLC–1, began in 1975 when the Survey of Spoken English was founded in Lund. The first copies of LLC–1 were distributed to interested scholars worldwide in the early 1980s. Since then, the corpus has had a major

influence on research on spoken English and provided data for a diverse range of topics in linguistics, such as the verb phrase (Aarts, Close, Leech, & Wallis, 2013), negation (Tottie, 1991) degree modifiers (Paradis, 1997, 2000, 2003, 2008), discourse particles (Aijmer, 2002), questions and responses (Stenström, 1984), turn organisation (Oreström, 1983), just to name a few. Some of the most influential reference grammars in English are also partly based on LLC–1 (Quirk, Greenbaum, Leech, & Svartvik, 1972, 1985).

LLC–1 comprises 100 texts of approximately 5,000 words each, totalling some 500,000 words for the whole corpus. The corpus data extend over four decades from the 1950s until the 1980s, although most of the recordings were made in the two decades in between. The speakers are adult educated native speakers of British English. The design of LLC–1 reflects the overall goal of the Survey of English Usage, which was to account for the grammatical and stylistic variation of spoken English (Svartvik & Quirk, 1980, p. 11; cf. Biber, 1993; Sinclair, 2005). This means that effort was made to collect enough recordings from each speech setting to reflect its distinct linguistic composition, instead of mirroring the exact statistical distribution of the setting in the population. Due to the rich range of grammar in impromptu speech, precedence was given to private conversation among people who knew each other well; however, care was taken to add to the corpus as many other speech settings as possible. Therefore, LLC–1 does not claim to represent spoken British English in its entirety, but provide a sufficiently satisfactory account of the grammatical and stylistic variation that exists in the variety (see Section 3.2.3 for further discussion on representativeness in corpus design).

Figure 3.2 presents the broad design of LLC–1. It shows that LLC–1 comprises both dialogue and monologue, which are divided into further categories. On the one hand, dialogues are either (private) conversations or public discussions, and the conversations are further divided into face-to-face and telephone conversations. The former were recorded either surreptitiously (i.e., without the knowledge of some of the speakers) or non-surreptitiously (i.e., with the full knowledge of all the speakers). Monologues, on the other hand, are either spontaneous or prepared. The main difference between the two types of monologue is that the former are relatively unplanned and allow for improvisation, while the latter are planned in advance.[18] The data used in the present thesis come from either surreptitiously or non-surreptitiously recorded face-to-face conversation.

[18] The original figure in Greenbaum and Svartvik (1990, p. 13) also makes a distinction between prepared monologue that is to be spoken (e.g., political speeches, lectures, sermons, court hearings) and to be written down (e.g., dictated letters). However, since the computerised version of LLC–1 only contains the former kind, then I have removed the latter from the figure given here.

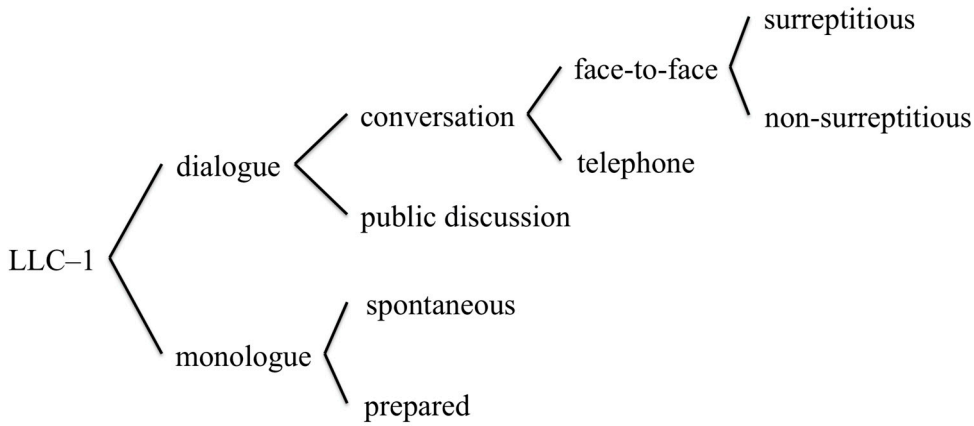

Figure 3.2. The broad design of LLC–1 (adapted from Greenbaum & Svartvik, 1990, p. 13)

The computerised version of LLC–1 is orthographically transcribed and marked up for basic prosodic features. The prosodic features are based on the British tradition of intonation analysis, where the basic unit of analysis is the tone unit (Cruttenden, 1997). Tone units are separated from each other by tone unit boundaries (represented in the transcriptions by #), and they consist of an onset (normally the first prominent syllable), a nucleus (normally the last prominent syllable)[19] and a pitch movement of some kind. The movement may be a fall from a high accented syllable (represented by \), a rise from a low accented syllable (/), a combination between the two (\/ for a fall–rise and /\ for a rise–fall) or a level (=). The transcriptions in LLC–1 are also annotated for pause length where brief pauses are represented by full stops (.) and unit pauses by the en dash (–).[20] Additionally, the transcriptions make reference to the identity of the speaker, overlapping speech (e.g., *yes*), contextual comments such as the ringing of a telephone and laughter (e.g., (laughs)) and incomprehensible words (e.g., ((yes))). Finally, each text in the corpus is accompanied by metadata about the text category, the year of the recording, speaker age, gender and what can roughly be considered their occupation (‘an academic’ but also ‘a vegetarian’).

In the present thesis, LLC–1 was accessed in two ways: in book form and electronically. The former was made possible by the fact that nearly all the face-to-face conversations in LLC–1 have been published in print form in Svartvik and Quirk (1980). The printed book formed the basis of the qualitative corpus-based analysis in Article 1, because the bottom-up method adopted in the study required

[19] When a tone unit consists of only one prominent syllable, then the syllable is simultaneously an onset and a nucleus.

[20] Other prosodic features in the corpus include boosters and stress, but they do not feature in the examples given here.

us to read the texts in full rather than automatically search for specific expressions. Automatic searches were instead carried out in Article 4 and for this purpose the electronic version of LLC–1 was used. Specifically, we accessed the corpus from the corpus management and analysis system *Corpuscle* developed at CLARINO Centre Bergen in collaboration with the University of Bergen in Norway.[21] The corresponding sound files were obtained from the Survey of English Usage at University College London.[22]

3.2.2 London–Lund Corpus 2

LLC–2 is a corpus of contemporary spoken British English developed at the Centre for Languages and Literature at Lund University by myself, Dr Victoria Johansson and Professor Carita Paradis.[23] I initiated the compilation of the corpus in 2014 when it became clear that no other publicly available corpus served the two-fold purpose of being (i) comparable to LLC–1 and (ii) representative of contemporary spoken English. Moreover, I was involved in all stages of compiling LLC–2, including the recording of the data, the transcribing of the recordings, the processing of the transcriptions, etc. The work ran in parallel to doing research for the thesis and was crucial for the development of the topics covered in the articles. In what follows, I will give a brief overview of the most important aspects of the compilation of LLC–2. However, the reader is referred to the LLC–2 corpus manual for a more detailed description of the corpus.[24] The website on which the manual is published provides further information about the whole project.[25]

LLC–2 comprises approximately 500,000 words, stored in 100 texts of 5,000 words each, and corresponding sound files. The corpus data were collected over a period of five years, 2014–2019, with adult educated native speakers of British English in the UK and Sweden. By the time of writing this thesis, the final design of LLC–2 has not yet been completed; however, the broad overview given in Table 3.3 is sufficient for the present purposes. As can be seen in the table, LLC–2 contains seven broad text categories representing a wide range of speech settings in which

[21] *Corpuscle* can be found at http://clarino.uib.no/korpuskel/page (sign-up required).

[22] It is worth noting that *Corpuscle* relies on the XML formatting of LLC–1, but the XML files themselves have not been released to the public. The same applies to the original recordings, which have not been anonymised and therefore cannot be made publicly available. However, access to the sound files, as well as the orthographic transcriptions as part of DCPSE, can be obtained from the Survey of English Usage at University College London (licence fee applies).

[23] Paschal O'Hare was employed as a research assistant and helped transcribe almost half of the recordings included in the corpus.

[24] The manual can be found at https://www.sol.lu.se/index.php?id=58993

[25] See https://www.sol.lu.se/en/subjects/engelska/llc2

people participate in the 21st century, either as speakers or listeners. The text categories are: face-to-face conversation, mobile phone/Skype conversation, broadcast discussions and interviews, spontaneous commentary, parliamentary language, legal language and prepared speech. Most of the categories are further divided into subcategories. The data for the present thesis are extracted from face-to-face conversation. Face-to-face conversation is the most important text category in LLC–2 as it makes up almost half of all the texts included in the corpus, which are further divided into two categories: conversations among equals and disparates.[26] The former involve speakers who are friends, peers in the workplace or related by descent or marriage; the latter involve speakers who have hierarchically unequal positions in the workplace or educational institution (see the LLC–2 corpus manual for information about the other text categories).

Table 3.3. The broad design of LLC–2.

Text category	Subcategory
Face-to-face conversation	Equals
	Disparates
Mobile phone/Skype conversation	Audio
	Video
Broadcast discussions and interviews	Discussions
	Interviews
Spontaneous commentary	Sports
	Video games
	Science
	Cooking
Parliamentary language	Question time
	Debates
Legal language	Hearings
Prepared speech	Politics
	Lectures
	Popular science
	Sermons

Data collection for LLC–2 was carried out in two parts: (i) the recording of private conversations and (ii) data collection of public recordings. The first part was concerned with recordings of private conversations such as face-to-face conversation. The recordings were advertised and carried out in three universities: University College London and Lancaster University in the UK (face-to-face and mobile phone/Skype conversations) and Lund University in Sweden (university

[26] The distinction is also made in LLC–1; however, in LLC–1 it is not limited to face-to-face conversation, but also applies to telephone conversations and broadcast discussions and interviews. This criterion was not followed in LLC–2 because it was almost impossible to collect data of mobile phone/Skype conversations among disparates, and because there were no clear guidelines as to how to distinguish between broadcast discussions and interviews with speakers who are on an equal footing and speakers who are not.

lectures by native British English speakers). The recording equipment varied depending on whether the speakers used our equipment or whether they used their own devices. The equipment offered by us was Zoom H4n Handy Recorder and, if necessary, the external microphone Shure MX393/O. All the speakers in the recordings were required to sign a consent form and fill in a questionnaire. In the questionnaire, the speakers were asked to provide information about their age, gender, occupation, education, (foreign) language use, place(s) of residence and accent. The mobile phone/Skype conversations were recorded with specialised software for recording mobile phone and Skype video calls. Importantly, the speakers were encouraged to talk about a topic of their own choice. The second part involved data collection from various public sources on the internet. For this, a rigorous copyright clearance process was undertaken in order to obtain the right to transcribe the recordings for linguistic purposes and to make both the transcriptions and the original recordings available for non-commercial public use.

All the recordings in LLC–2 were orthographically transcribed and marked up for a number of features. The transcriptions were segmented by speaker turns, and each turn in the corpus was timestamped and linked to the corresponding place in the sound file.[27] The transcription and markup scheme is based on the standardised markup language XML (*eXtensible Markup Language*). XML is commonly used in corpus markup and is compatible with widely used corpus tools such as AntConc (Anthony, 2019) and Wordsmith (Scott, 2019). It works on the principle that whatever is enclosed within angle brackets is treated as corpus markup and whatever falls outside the angle brackets is the actual corpus text. The markup includes a number of features that are important for spoken language production, including, but not limited to, pauses (represented in the transcriptions by <pause/>), overlapping speech (e.g., <[> and </]>),[28] non-verbal vocalisations such as laughter (<vocal desc="laugh"/>), events such as the ringing of a telephone (<event desc="telephone rings"/>) and anonymised names (e.g., <anon>Mary</anon>). The text itself contains various semi-lexical features (Andersen, 2016) such as filled pauses, backchannels and exclamations (e.g., *uh(m)*, *yeah*, *mm*, *oh*). Due to time constraints, the transcriptions do not feature any information about tone units and pitch movement, but the availability of sound files in LLC–2 makes it possible to extend the corpus data into the domain of prosodic analysis.

LLC–2 is expected to be released to the public in late 2019. The corpus will be available for download from the Lund University Humanities Lab's corpus server.[29]

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[27] Note that the timestamps have been removed from the examples given in this thesis to improve readability.

[28] Note that the angle brackets around the markup for overlaps have been removed from the examples given in this thesis to facilitate the task of the reader. Multiple overlaps in the examples have been numbered.

[29] The server can be found at https://corpora.humlab.lu.se

Future endeavours include making LLC–2 available from *Corpuscle*, the same system that also hosts LLC–1 (see Section 3.2.1 above).

3.2.3 Comparing the corpora

Broadly speaking, the London–Lund Corpora are comparable corpora in the sense that they differ from each other in terms of only one parameter, the parameter of time (see Leech, 2007). While the data for LLC–2 were recorded in the 1950s–1980s, LLC–2 was recorded in 2014–2019, that is, nearly 50 years later. Therefore, any significant differences between LLC–1 and LLC–2 can be assumed to be due to temporal variability between the corpora rather than variability within LLC–1 or LLC–2 (Leech, 2007).

The rest of the parameters have been kept constant to the extent possible. Importantly, both corpora contain recordings of spoken British English involving adult educated speakers. Furthermore, the size and design of LLC–1 have been taken as the ultimate goal in the compilation of LLC–2 and, by and large, this goal has been achieved. For example, both LLC–1 and LLC–2 contain around 500,000 words spread across a number of different text categories involving both dialogue and monologue, and all the seven text categories found in LLC–2 (see Section 3.2.2 above) are also present in LLC–1.

However, there are minor differences within the categories themselves. This is due to the inherently incompatible relationship between comparability and another important notion in corpus design, representativeness. Representativeness is defined as the extent to which a corpus reflects the variability found in the population. One possible reason for the incompatibility, according to Leech (2007), is genre evolution. Consider the genre of telephone conversation. In LLC–1, telephone conversations were carried out over landline telephones. However, the mobile and internet revolution in the past few decades has made landlines phone calls increasingly obsolete (Sweney, 2019). This means that recording them for LLC–2 would have improved the comparability between LLC–1 and LLC–2, but reduced the extent to which the latter corpus is representative of the communication channels more commonly used in the 21st century. In this case, the decision was made to improve representativeness and replace the landline telephone conversations in LLC–1 with mobile phone/Skype conversations in LLC–2.[30] Trade-offs of this kind were necessary in order to maintain the integrity of LLC–2 as a corpus in its own right, but still achieve a sufficiently high degree of comparability with LLC–1. Indeed, Leech (2007) argues that the notions of comparability and representativeness in corpus design should not be seen as all-or-nothing but as

[30] Internet voice calls were also considered, but since there are currently no programs available for recording VoIP sofware applications such as Viber and WhatsApp, then this idea was discarded.

scales, and the goal of the corpus developer should be to "define realistically attainable positions on these scales" (p. 144). However, this only works if the corpus developer documents how these goals were achieved and makes the documentation accessible to the end user, who can then decide for him/herself if the corpus is sufficiently comparable or representative for his/her purposes. In addition to the brief discussion given here, a detailed account of how the balance between comparability and representativeness was achieved in the London–Lund Corpora is provided in the LLC–2 corpus manual (see Section 3.2.2 above).

A high degree of comparability was achieved in the text category used in the investigations in this thesis, namely face-to-face conversation. Face-to-face conversation was considered to be the most basic type of language use at the time of the compilation of LLC–1 (Fillmore, 1981), and, despite widespread speculation in the media about the deteriorating effect of technology on people's interpersonal skills, the importance of face-to-face conversation in everyday language use is still recognised today (Clark, 1996; Linell, 2009b). Therefore, the text category was given roughly the same level of precedence in both LLC–1 and LLC–2 (almost half of all the texts), and it also features speakers who come from similar socio-economic backgrounds (i.e., educated adults). Moreover, the bulk of the conversations in both corpora were recorded in London, and specifically with speakers who were affiliated with University College London either through work or study.

Despite the similarities, it is worth noting that there are two differences between LLC–1 and LLC–2 that are important for how we assess the data on which the investigations carried out in the thesis are based. The first difference relates to whether or not the speakers were aware of being recorded. As mentioned in Section 3.2.1 above, many of the face-to-face conversations in LLC–1 were recorded surreptitiously, which means that the speakers were not given any reason to deviate from their usual speech behaviour. However, the ethical guidelines and regulations of the 21st century do not allow for recordings without prior consent. As a result, the speakers in LLC–2 were always aware of the fact that they were being recorded and therefore may have produced speech that is more unnatural than in LLC–1. To reduce the effect of observer bias, we used unobtrusive recording equipment and avoided transcribing the first few minutes of the conversations.

The second difference relates to the transcription and markup conventions used. As can be seen in Sections 3.2.1 and 3.2.2 above, LLC–1 and LLC–2 were marked up in different ways. While the conventions used in LLC–1 were developed specifically for the purposes of the corpus project, LLC–2 is marked up using the standardised markup language XML. The main reason for this is because the conventions in LLC–1 are incompatible with many of the corpus tools used today. For example, there is no straightforward way to carry out word counts of the actual corpus text without having to specify, one by one, the symbols used to represent, for example, pauses (. or –), overlapping speech (e.g., *yes*) and incomprehensible words (e.g., ((yes))). By contrast, the transcriptions in LLC–2 contain angle-

bracketed XML tags (e.g., <pause/> and <anon>Mary</anon>) that can easily be removed in word counts of the actual corpus text.

A combination of the conventions is used in the articles included in the thesis. Article 1 is based on data from LLC–1 only, which means that the conventions used to illustrate the examples are from LLC–1. The opposite is the case in Articles 2 and 3 that rely on data from LLC–2 only. Article 4 combines data from both LLC–1 and LLC–2. Therefore, in order to achieve a certain level of consistency between the examples extracted from the corpora, the conventions in LLC–1 were changed to match the conventions in LLC–2.

4. Summaries of the articles

This chapter presents the summaries of the four articles included in the thesis. Each article approaches the theoretical aim of the thesis from its own unique perspective to reach a more comprehensive understanding of the dynamics of meaning-making in spoken dialogue. Below, I present the most important theoretical and empirical foundations of the articles, together with the main findings, but the reader is referred to the original articles at the end of the thesis for more details.

4.1 Summary of Article 1

Article 1 (Põldvere, Fuoli, & Paradis, 2016) examines the formal and interactive factors that influence the dialogic meaning of a family of first-person epistemic and evidential complement-taking predicate (CTP) constructions such as *I think* COMPLEMENT, *I suppose* COMPLEMENT and *I know* COMPLEMENT in spoken discourse. According to APPRAISAL theory (Martin & White, 2005), the primary communicative motive of CTPs is to engage with the heteroglossic backdrop of other voices and alternative viewpoints in discourse. While most of the expressions such as *I think* and *I suppose* are considered to have an expansive function, meaning that they open up the dialogic space for possible alternative viewpoints, *I know* is contractive and closes down the space for dialogic alternatives.

Article 1 questions the rigid treatment of ENGAGEMENT expressions in APPRAISAL theory and its conception of meaning in language as fixed and context-independent. Moreover, the theory lacks analytical tools for poly-functionality and meaning flexibility that could explain why CTP constructions sometimes seem to perform the opposite function. Consider *I think* in example (13). The example is taken from LLC–1 and retains the original transcription and markup conventions used in the corpus (see Section 3.2.1 above for an overview).

(13) B: **I think** he was \obviously trying . to st\eer us in that dir/ection [ə] and sort of
A: y=es
B: dropping h\ints

In (13), *I think* is prosodically unaccented and serves as a comment on the opinion expressed in the complement clause, which also contains the evidential marker *obviously* with a falling accent. The high degree of commitment signalled by *obviously* seems to override *I think* as an expansive dialogic marker and contribute to the interpretation of the whole CTP construction as relatively contractive. Although Martin and White (2005) acknowledge that the dialogic meaning of ENGAGEMENT expressions "may vary systematically under the influence of different co-textual conditions, and across registers, genres and discourse domains" (pp. 103–104), these conditions are not discussed in detail by the authors, nor have they been systematically investigated in the literature. Therefore, the main objective of Article 1 is to challenge the treatment of CTP constructions in APPRAISAL theory by studying the effect of several formal and interactive factors on the dialogic meaning of CTP constructions with focus on *I think* COMPLEMENT.

The analysis is based on a combination of a qualitative corpus-based analysis of a range of CTP constructions and a controlled laboratory experiment on the most frequent and functionally diverse CTP construction, *I think* COMPLEMENT. The corpus data are taken from everyday face-to-face conversation in LLC–1. The aim of the analysis is to identify the factors that may play a role in determining the dialogic meaning of CTP constructions. Three factors were found to be especially important for the interpretation of the constructions: interlocutor status, the presence of a contractive marker and the prosodic marking of the CTP. Their effects were tested with 31 native speakers of English in an experiment for which the following hypotheses were developed (for a brief overview of the experimental design, task and stimuli, see Section 3.1.2 above).

- Hypothesis 1. Utterances containing *I think* produced by speakers of equal status will be perceived as more expansive than utterances produced by speakers of higher status.
- Hypothesis 2. Utterances containing *I think* only will be perceived as more expansive than utterances containing *I think* and an additional contractive marker.
- Hypothesis 3. Utterances in which *I think* receives an accent on the verb will be perceived as more expansive than utterances in which the accent is on the pronoun, which in turn will be perceived as more expansive than utterances with no accent on *I think*.

The combined results show that CTP constructions express both dialogic EXPANSION and CONTRACTION. The dialogic meaning of *I think* COMPLEMENT, in particular, relies heavily on the interaction between prosodic, collocational and social factors, with interlocutor status having the strongest and most consistent effect. For example, the combination of the unaccented *I think* and a co-occurring contractive marker, such as in (13) above, was perceived as the most expansive utterance type in conversations among equals but significantly more contractive in

conversations among disparates. Moreover, utterances where *I think* received an accent on the pronoun were interpreted as relatively more contractive than utterances where the accent fell on the verb (see the article for a more thorough examination of the results). This shows that, for an accurate description of stance-taking and intersubjective engagement, it is important to take into account the social nature of stance as well as the dynamic and context-dependent nature of meaning in language.

4.2 Summary of Article 2

Article 2 (Põldvere, Johansson, & Paradis, under review) moves the focus away from a specific family of stance constructions to a linguistic phenomenon that plays an important role in meaning-making in spoken dialogue, namely dialogic resonance (Du Bois, 2014; Du Bois & Giora, 2014). Dialogic resonance emerges when speakers selectively reproduce constructions from prior discourse to create new meaning affordances and to establish intersubjective engagement with their interlocutors in the immediate common ground. Consider the utterances in bold in (14), taken from LLC–2 (see Section 3.2.2 above for the transcription and markup conventions used in the example).

(14) A: I'm surprised that she's unaware of the programme at seven AM on Sunday which is called uh it's called Sunday
B: well why should she be **she hasn't hitherto been particularly interested in religious things [has she]**
A: **[you mean] she hasn't particularly been up at seven AM**
B: no that too

In (14), speaker A resonates with B along multiple dimensions of linguistic representation, including lexical choice, syntactic structure and the intonation contour, which in the original sound file takes the shape of a rising–falling pitch. The resulting parallelism evokes the analogical inference that A's utterance is meant to be understood as expressing divergent alignment with B's prior turn. The divergence between the stances is achieved creatively in that it is negotiated in a dynamic way and requires explicit contextual motivation to be understood as such (Paradis & Willners, 2011). This is different from pre-existing resonance, which is systematic and relies on strongly conventionalised aspects of language (e.g., repetitions and intersubjective alignment markers such as *too* and *either*). In interactional linguistics, dialogic resonance is first and foremost an intentional process that draws on conscious strategies of meaning-making (cf. Clark, 1996). A slightly different view of linguistic alignment is adopted in cognitive psychology where alignment is a mechanistic process facilitated by automatic priming (Garrod

& Pickering, 2004). Article 2 seeks to narrow the gap between interactional linguistics and cognitive processing of speaker turns in dialogue by taking an interest in the interaction of intersubjective processes and priming mechanisms in resonance production.

The study is carried out in two parts. The first part is concerned with the intersubjective processes of resonance, explored through the intersubjective functions that resonance has in discourse. Previous research in interactional linguistics has focused on the tendency for resonance to convey dialogically divergent meanings (e.g., Dori-Hacohen, 2017; Maschler & Nir, 2014; Nir et al., 2014; Zima et al., 2009), which prompted us to make the following prediction.

- Prediction 1. Dialogic resonance is more likely to express divergent alignment with the interlocutor's prior stance than non-resonance, which favours convergent alignment.

The second part of the study takes a novel approach to resonance by exploring the role of cognition and particularly automatic priming in resonance production. This is achieved through the operationalisation of priming as the time it takes for speakers to respond to the interlocutor's prior stance. Based on the widely accepted view in cognitive psychology that automatic priming leads to the reduction of cognitive load (Garrod & Pickering, 2004), we made the following prediction.

- Prediction 2**.** Transitions between turns are faster if the utterances display dialogic resonance (pre-existing and then creative) compared to when they are constructed anew, except for response tokens, which are highly conventionalised.

The methodological approach used in Article 2 is a quantitative corpus-based analysis, based on a sample of everyday face-to-face conversation from LLC–2. The reason for adopting a quantitative approach is to provide quantitative support to some earlier claims in interactional linguistics about the close relationship between dialogic resonance and divergent alignment, and to propose a precise operationalisation of resonance. Moreover, strict control needed to be established to extract reliable measurements of turn transitions from the conversations and to reduce the effect of confounding variables on the results (see Table 1 in the article for an overview of the variables).

The results provide full support for Prediction 1 in that dialogic resonance is significantly more likely to express divergent alignment with the interlocutor's prior stance than non-resonance. We propose that the reason why speakers draw on resonance relations to express divergent views is because resonance is a fruitful way to mitigate the negative social consequences associated with disagreement. Specifically, alignment at lower levels of linguistic representation seems to enhance

the perception of interpersonal solidarity between the interlocutors at higher levels of social relations. For example, the structural parallelism in (14) above seems to mitigate the force of the ensuing disagreement and narrow the conceptual gap between the interlocutors (see the article for comparable examples of non-resonance).

Prediction 2 receives partial support, showing that dialogic resonance and particularly pre-existing resonance leads to faster turn transitions than fully-fledged turns of non-resonance (a more thorough examination of the results is provided in the article). This shows that priming plays an important role in resonance production as it provides the speakers with the necessary cognitive tools to counter the temporal pressures of impromptu speech where transitions between turns are very quick. The apparent ease with which speakers resonate with the interlocutor's prior turn to express divergent views is particularly compelling (after a slight gap of 196 and 355 ms for pre-existing and creative resonance respectively; see Table 2 in the article for other measures). Considering that disagreement is typically expressed after a delay (Pomerantz, 1984), we argue that it is the increased sense of interpersonal solidarity that resonance evokes that encourages the speakers to respond early. Therefore, the results provide strong support for the close and reciprocal relationship between the social goals that speakers have in discourse and the cognitive mechanisms that underpin it.

4.3 Summary of Article 3

Article 3 (Põldvere & Paradis, 2019a) defines and describes the constructional properties of the reactive *what-x* construction in spoken dialogue including its formal and interactive characteristics. I first came across the reactive *what-x* construction during the compilation of LLC–2. The construction caught my attention because it was different from other, better-known *what*-constructions in English and because it has not received any attention in the literature so far. The only exception is an example in Stenström (1984, p. 59). The example is taken from LLC–1 and given here in bold in (15).

(15) A: one wouldn't [ə:] have the nerve to take that one would one .
B: **what that nude** .
A: yeah
B: yes well it's sort of too . yes

Stenström (1984) describes the construction in (15) as a request for clarification that speaker B needs to make to be able to answer A's original question. However, Stenström's (1984) analysis does not make any reference to the distinct formal

properties of the construction (*what* connects directly with *that nude*), and the one example given by her does not cover the range of dialogic functions that the construction has in discourse. Based on conversational data from LLC–2, Article 3 seeks to establish a comprehensive constructional representation of the reactive *what-x* construction in English, and determine the frequency of the construction relative to other *what*-constructions. The underlying goal of the study is to extend the notion of construction in Construction Grammar in dialogic and prosodic directions.

The reactive *what-x* construction occurs 45 times out of 1,566 *what*-constructions in the data. The construction is more frequent than, for instance, the exclamative determiner *what* (e.g., *what a surprise*), which supports the interpretation of the reactive *what-x* construction as a conventionalised unit in English. A close analysis of all the 45 examples gave us a comprehensive constructional representation of the construction with reference to both its form and meaning dimensions. The formal properties are divided into two parts: internal and external structure. The internal structure specifies that the reactive *what-x* construction comprises *what* and a subsequent phrasal or clausal complement *x*. Importantly, the two elements always form one and the same tone unit with the nuclear pitch accent in the complement part. In this way, the reactive *what-x* construction is different from the pragmatic marker *what*, which is always prosodically prominent (e.g., *I was like wh/at*). The external structure concerns the sequential placement of the reactive *what-x* construction in the surrounding discourse. It specifies that the construction is responsive and always follows an immediately preceding turn by another speaker. The projective properties of the construction are less rigid and are dependent on its dialogic function (see below).

These formal properties are symbolically linked to the meaning potential of the construction, namely to react immediately to the interlocutor's preceding turn in order to negotiate and call it into question. Moreover, the dialogic embedding of the construction in specific discourse contexts has given rise to three dialogic functions: requests for verification, requests for information and adversative requests. Example (15) above is a request for verification in that it is used to verify a specific referent from the preceding turn and to close the hovering knowledge gap between the interlocutors.[31] Requests for information elicit new information from the

[31] Another possible interpretation of requests for verification is their use as insertion sequences (M. Johansson, personal communication, 28 May, 2019). Insertion sequences are sequences of turns in Conversation Analysis that intervene between the first and the second part of an adjacency pair. In (15), the first pair part would be the original question and the second part the answer to that question. However, I am hesitant to adopt this definition to describe requests for verification because, in our data, requests for verification are not always surrounded by a clear adjacency pair, especially when the first pair part does not necessarily anticipate a response (e.g., assessments; see example (22) in the article). In such cases, the request for verification is better seen as initiating its own adjacency pair. The same applies to all instances of the other dialogic functions, requests for information and adversative requests, which always initiate a new adjacency pair.

interlocutor and, in so doing, introduce a slight topic shift in the conversation. Finally, adversative requests are fundamentally different from requests proper in that they are used to express disagreement and opposition with the previous speaker. While most of the reactive *what-x* constructions in our data are only mildly attitudinal, adversative requests and some instances of requests proper are used to take an explicit stance. A more thorough constructional representation of the reactive *what-x* construction is given in Figure 5 in the article.

The formal and interactive properties of the reactive *what-x* construction investigated in Article 3 highlight the need to extend Construction Grammar to cover not only the lexical–semantic pairing but also dialogic and prosodic properties. They also raise further questions about the diachronic processes by which the construction acquired the properties. This is the topic of Article 4.

4.4 Summary of Article 4

Article 4 (Põldvere & Paradis, 2019b) tracks the diachronic development of the reactive *what-x* construction to establish the social motivations and cognitive mechanisms that foster the development of constructions in spoken dialogue. Moreover, the lack of research on the reactive *what-x* construction prompted us to explore whether the construction is very new in English conversation or whether it was already in use 50 years ago. The analysis is based on both LLC–1 and LLC–2, which makes Article 4 the first study to make use of the London–Lund Corpora as diachronic resources.

In order to provide a comprehensive account of the development of the reactive *what-x* construction, the study combines insights from Diachronic Construction Grammar (Traugott & Trousdale, 2013) and Invited Inferencing Theory of Semantic Change (Traugott & Dasher, 2005). While the Invited Inferencing Theory is well equipped to explain the social and interactive processes that motivate language change (i.e., *why* speakers acquire constructions), Diachronic Construction Grammar provides a cognitive explanation for the gradual micro-adjustments that constructions undergo over time (i.e., *how* speakers acquire constructions). Paradis (2004, 2011) argues that the cognitive mechanism that underpins language change is metonymisation, which profiles salient and contextually motivated aspects of the conceptual structure of meaning in language.

In addition to the 45 examples of the reactive *what-x* construction extracted from LLC–2 in Article 3 (see Section 4.3 above), we found another 22 examples of the construction in LLC–1. This means that the reactive *what-x* construction is not entirely new in English but that, by the 1950s, the construction had already undergone constructionalisation and developed into a new form–meaning pairing. Furthermore, the increased use of the construction over the past half a century

suggests that, after constructionalisation, the reactive *what-x* construction underwent further constructional changes in its meaning applications and expanded to new discourse contexts with increasingly subjective meanings (e.g., adversative requests; see Section 4.3 above).

We argue that the development of the reactive *what-x* construction is the result of a complex interplay between social motivations and cognitive mechanisms of language change. The change was triggered by the pragmatic strengthening of several constructional, discourse-structuring and turn-taking inferences, which led to the use of the standard interrogative *what*-construction in an innovative way. The innovation was supported by analogical associations between the new expression and the responsive properties of the non-interrogative schema. The non-interrogative schema contains constructions such as the exclamative *what* and the pragmatic marker *what*, used to express subjectivity with respect to a verbal (or non-verbal) stimulus. The recent expansion of the reactive *what-x* construction to new discourse contexts suggests an increasingly strong influence exerted by the responsive schema. However, the backward pull exerted by the interrogative schema ensures that the construction continues to be used as a question. A highly simplified and partial constructional network of the development of the reactive *what-x* construction is given in Figure 2 in the article.

As for the cognitive mechanisms that operate on the conceptual level of meaning in language, the change proceeded through metonymic micro-adjustments of the dialogic and formal properties of the source constructions. In order to use the interrogative *what*-construction in the innovative way, the speakers had to activate the relevant zone in its meaning potential and make the reactive reading salient in the profiling of the construction.[32] Change took place when the reactive reading became the conventional meaning of the new construction. Simultaneously, the reactive *what-x* construction underwent a profile shift from *what* to the complement, which explains why the construction never receives an accent on the question word (see the article for the role of metonymisation in subsequent constructional change).

In sum, Article 4 demonstrates the benefits of using the London–Lund Corpora to study short-term meaning shifts and change. The conversational data found in the corpora put on full display the socio-cognitive processes that constructions undergo in a short period of time, and the distinct dialogic and prosodic properties that they acquire along the way. It is only with access to corpora based on everyday conversation such as the London–Lund Corpora that these research objectives can be met.

[32] While the interrogative *what*-construction is not a responsive construction, it is implicitly linked to prior discourse, as is the case with all utterances in connected coherent speech (Linell, 2009b, p. 296).

5. Conclusions

This chapter presents the conclusions that I have drawn based on the articles included in the thesis. It starts by summarising the main findings of the articles in relation to the research questions posed in Chapter 1 above (Section 5.1). Then, it considers the importance of the thesis and the contributions that it makes to spoken dialogue and other related disciplines (Section 5.2), and, finally, limitations and directions for future work are outlined in Section 5.3.

5.1 Summary of main findings

The broad question that has guided and grounded the investigations carried out in this thesis is: What's in a dialogue? The primary aim of the thesis has been to address two aspects of this question, namely the kinds of properties that influence the meaning of constructions in spoken dialogue and the role of underlying socio-cognitive processes. The first research question is concerned with the former aspect.

RQ1. What formal and interactive properties influence the meaning of constructions in spoken dialogue?

This question is pursued in Articles 1 and 3, where I focus on two constructions in English that are commonly used in, or specific to, spoken dialogue: *I think* COMPLEMENT and the family of complement-taking predicate constructions, and the reactive *what-x* construction respectively. The combined results show that, in spoken dialogue, constructions are characterised by a range of properties that go beyond form–meaning pairing in the strict lexical–semantic sense and into the domains of prosody, dialogicity and social interaction. On the one hand, the formal properties identified in the studies include prosody, collocations and sequential dependencies. Prosody was found to be particularly important. Article 1 shows that speakers' intentions of whether *I think* COMPLEMENT should be interpreted as relatively more dialogically expansive or contractive is grounded in the type of prosodic marking of *I think*. In Article 3, prosody is a defining property of the reactive *what-x* construction, which always contains the unaccented *what* in one and the same tone unit as the following complement. Pitch accent on *what* would result

in a shift in meaning of the construction, similar to that of the pragmatic marker *what*. Therefore, intonation, or any other aspect of prosody, is not only a conversational practice that yields local, situated interpretations, but, at least in the case of constructions specific to spoken dialogue, it may also be a constructional property that has become conventionally associated with the formal dimension of constructions.

On the other hand, the interactive properties identified in Articles 1 and 3 provide support for the view that the meaning dimension of constructions is broad and interactive, and incorporates more or less conventionalised social and dialogic properties. One such property is the perceived relationship between the speakers, which in Article 1 had the strongest and most consistent effect on the speakers' interpretation of the dialogic meaning of *I think* COMPLEMENT. Another property is dialogic function. It was shown in Article 3 that the dialogic embedding of the reactive *what-x* construction in specific discourse contexts has given rise to three dialogic functions: requests for verification, requests for information and adversative requests. We argue that properties such as interlocutor status and dialogic function are constraints that operate on the meaning potential of the respective constructions on the occasion of use. The meaning potential of *I think* COMPLEMENT is to express dialogic EXPANSION, while the reactive *what-x* construction is used to express an immediate reaction.

The second research question is concerned with the underlying processes of meaning-making in spoken dialogue.

RQ2. What is the role of social motivations and cognitive mechanisms in dialogic meaning-making?

This question is investigated in Articles 2 and 4 that focus on two linguistic phenomena that are ubiquitous in spoken dialogue: dialogic resonance and meaning shifts and change respectively. Both studies provide empirical evidence for the close and reciprocal relationship between social motivations and cognitive mechanisms in dialogic meaning-making and show that language use is as much an intentional process as it is a mechanistic process. For example, Article 2 finds that, contrary to the tendency for disagreements to be expressed after a delay, speakers often and very quickly resonate with the interlocutor's prior stance to express divergent views. We propose that this is due to the complex interplay of intersubjective processes and priming mechanisms. While priming reduces the gap between speaker turns, the increased sense of interpersonal solidarity that resonance is assumed to evoke gives the speakers the motivation to respond early. Similarly, Article 4 explores the interaction of social motivations and cognitive mechanisms in the diachronic development of constructions in spoken dialogue, and finds that the development of the reactive *what-x* construction is triggered by the pragmatic strengthening of

discourse-structuring and turn-taking inferences, and proceeds through metonymic micro-adjustments of the conceptual structure of the construction itself.

In addition to the primary aim as outlined above, the thesis also has a secondary aim. The secondary aim is practical and related to the compilation of LLC–2, which ran in parallel with the investigations carried out in the thesis. The methodological challenges of compiling the corpus are not discussed in the articles, but some of the challenges have been briefly outlined above. The most demanding of them is the general task of planning, designing and compiling a corpus that is at the same time representative of spoken British English in the 2010s and comparable to LLC–1 from the 1950s–1980s. We believe that sufficiently high degrees of representativeness and comparability have been achieved, but the corpus user is encouraged to consult the LLC–2 corpus manual for considerations of the suitability of the corpus for his/her own research purposes.

5.2 Contributions

The thesis offers several contributions that are theoretical, descriptive and methodological in nature. The most important theoretical contribution is that the investigations carried out in the thesis further our understanding of spoken dialogue and the dynamic negotiation of meaning in English conversation. It does so by providing a systematic and empirically grounded account of the ways in which speakers frame and negotiate meaning, and the ease and success with which they coordinate and align their contributions to ensure mutual understanding. By exploring the processes in everyday face-to-face conversation rather than in written language, we challenge the written language bias evident in the language sciences, and advocate the development of linguistic theories that are also influenced by speech.

An important contribution of the thesis is that it combines insights from several approaches in usage-based Cognitive-Functional Linguistics to gain a more comprehensive understanding of meaning-making in spoken dialogue. On the one hand, Articles 3 and 4 are couched in approaches that are primarily concerned with the semiological function of language such as Construction Grammar and its historical development Diachronic Construction Grammar, but the studies propose a broadening of the notion of construction to also include essential dialogic and prosodic information. Prosody is a particularly under-researched area in Construction Grammar. This thesis brings new insights into the constructional status of prosody in general and intonation in particular, and their importance in dialogic meaning-making.

On the other hand, Articles 1 and 2 make use of approaches that are well equipped to account for the interactive nature of meaning in language, but where insights from

the cognitive dimension are needed. For example, Article 1 contributes to the refinement of APPRAISAL theory by distinguishing between the meaning potential of ENGAGEMENT expressions and the role of several contextual factors in the actualisation of the potential in authentic communication. Instead of assuming that ENGAGEMENT expressions have fixed meanings, this novel approach provides a more cognitively plausible account of how semiological and interactive functions interact in dialogic meaning-making. Article 2 contributes to research on dialogic resonance by offering a novel explanation for its underlying processes. Unlike most previous research on resonance in interactional linguistics, this study borrows insights from cognitive psychology to investigate the role of automatic priming in resonance production, and how it interacts with strategic meaning-making. The operationalisation of priming as the time it takes for speakers to resonate with the interlocutor's prior turn is a measure that, to the best of my knowledge, has not been considered before.

Articles 3 and 4 make a descriptive contribution to English linguistics by introducing a construction that has not received any attention in the literature so far, namely the reactive *what-x* construction. The systematic occurrence of the construction in the corpora used suggests that the construction is commonly used in English conversation. Moreover, its distinct formal and functional properties indicate that, when learners of English encounter the construction, they may have difficulty in discerning its exact meaning. Therefore, the articles make a strong case for including the reactive *what-x* construction in reference grammars and teaching materials about the English language.

From a methodological point of view, the thesis offers new ways of carrying out accurate and reliable analyses of stance-taking and intersubjective engagement in spoken dialogue. For example, Article 1 is the first study to combine insights from a corpus-based analysis with a controlled laboratory experiment to test hypotheses generated from APPRAISAL theory. By doing so, it also adds to the growing body of research in the language sciences that combines corpus and experimental methods to gain a more complete and falsifiable understanding of linguistic phenomena. Article 2 offers a novel approach to dialogic resonance by proposing a precise, time-locked operationalisation of resonance and, in so doing, providing quantitative support to some earlier claims about the intersubjective functions that resonance has in discourse. Furthermore, it illustrates the feasibility of using corpus data to study cognitive processes of spoken language production, as long as one exerts strict, experiment-like control over the data at hand.

Finally, the compilation of LLC–2 has clear practical significance. First, the release of the corpus to the wider academic community will facilitate principled investigations of spoken language in almost all areas of the science of language, both from a contemporary and a back-in-time perspective when combined with LLC–1. Moreover, making the original sound files available alongside the transcriptions is a feature of LLC–2 that is not common in most other spoken

corpora. Finally, the corpus will reduce the existing imbalance in the availability of spoken and written corpora in English, and make possible the investigation of properties that are not available in written corpora such as prosody.

5.3 Limitations and future work

The thesis has several limitations that, in turn, provide opportunities for future work. One limitation is that the thesis only addresses a selection of factors that are important for the use and development of constructions in spoken dialogue. Future work will have to consider additional factors. One possible avenue of research in this regard is the emerging field of Cognitive Sociolinguistics (e.g., Geeraerts, Kristiansen, & Peirsman, 2010; Kristiansen & Dirven, 2008). Similar to the approach taken here, Cognitive Sociolinguistics takes a broader and more social perspective on constructions than is usual for cognitive linguists, but, in contrast to my approach, it draws on factors such as the speakers' place in society, their participation in different community roles, and implicit and explicit attitudes to and perceptions of linguistic variation (Pütz, Robinson, & Reif, 2012, p. 6). The social aspect of constructional meaning is explored in Article 1 through the inclusion of interlocutor status, and a mention in passing is made in Article 3 that the reactive *what-x* construction is mainly used in conversations among speakers who know each other well. However, other factors such as language variety, age, gender and socio-economic status could be explored to reach an even more comprehensive understanding of the social workings of spoken dialogue.

As for Article 1 in particular, more work could be done to refine the treatment of evaluative expressions in APPRAISAL theory. In addition to the category of ENGAGEMENT, future work could test the validity of other APPRAISAL categories such as ATTITUDE. The category concerns expressions of positive and negative feelings, judgements of behaviour, and appreciations of semiotic and natural phenomena (Martin & White, 2005). Fuoli (2018) presents a number of examples of cases where there is doubt about the classification of evaluative expressions. One of them is the distinction between expressions that are explicitly evaluative, inscribed APPRAISAL, and expressions that only "imply or invite a positive or negative evaluation" (Fuoli, 2018, p. 235), invoked APPRAISAL. Fuoli (2018, p. 235) notes that the boundaries between the two types of attitudinal meaning are not always clear-cut and that, currently, there is no simple rule that can be consistently applied to discern the difference between them. This is, of course, problematic for the manual coding of the expressions. Therefore, a similar approach to the one in Article 1 could be employed to detect contextual factors that determine the degree of explicitness of evaluative expressions.

Another important limitation is that, with the exception of Article 1, the thesis investigates the communicative practices that speakers draw on in a variety of conversational contexts rather than the addressees' reactions to these practices. This is due to the fact that three of the four articles included in the thesis are exclusively based on corpus data. For example, the results of Article 2 could be triangulated in a controlled laboratory experiment to confirm the validity of the resonance categories developed in the corpus-based study. The experiment could test the participants' reactions to the interpersonal effects of resonance, and whether or not the increased sense of interpersonal solidarity evoked by resonance is understood in the same way under strict experimental conditions. There is also ample opportunity for further corpus work. For example, one could model the progression of resonance over longer sequences of discourse to see if speakers increasingly resonate with each other's words and structures within the boundaries of a single conversation. Similar work has been done on short-term linguistic accommodation of mainly dialectal features (see, for example, Stamp, Schembri, Evans & Cormier, 2015), but dialogic resonance could shed new light on features such as lexical choice, syntactic structure and intonation.

The compilation of LLC–2 during my PhD studies created a situation where only parts of the corpus could be used in the studies. This means that the studies were limited in terms of the size of the samples extracted from the corpus. This is particularly noticeable in Articles 3 and 4, where the relatively low frequency of the reactive *what-x* construction in everyday face-to-face conversation raises questions about the extent to which the construction is a conventionalised unit in English. Therefore, future studies on the construction could make use of the totality of LLC–2 to see if more instances of the construction can be found. Investigations of this kind could also reveal further functions of the construction in English.

In addition to extending the investigations carried out in this thesis, LLC–2 could be used in other areas of linguistics, too. For example, in an ongoing project with Dr Rachele De Felice from University College London, we use the corpus to study the social actions of advice-giving and uptake in English. While advice is pervasive in everyday life, the act of telling another person what to do is an inherently sensitive issue that may result in negative outcomes. The aim of the project is to explore the role that words and constructions play in advice-giving and uptake, and to gain a better understanding of the power of language in the service of human social behaviour. The outcomes of the project are disseminated in two studies. The first study makes use of the London–Lund Corpora as diachronic resources and tracks changes in constructions expressing advice over the past 50 years (Põldvere, De Felice, & Paradis, 2018). In the second study, we take the perspective of the recipient of the advice and investigate the constructional and interactive factors that affect advice uptake, that is, whether it is accepted, resisted, rejected or ignored altogether (De Felice & Põldvere, 2019). This study adopts a synchronic approach to advice and draws on data from LLC–2 only.

As mentioned in Chapter 1 above, the year 1975 will forever go down in history as the year when Professor Jan Svartvik and colleagues at Lund University started the computerisation of LLC–1, a corpus that was of crucial importance for research on spoken dialogue at the time. The year 2019 will mark another important event for corpus linguists as the year when LLC–2 will be made publicly available. This thesis has demonstrated the benefits of using the corpus for both contemporary and diachronic investigations of spoken dialogue, and I hope that it will encourage others to continue work on this fascinating topic to bring further clarity to the question: What's in a dialogue?

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