Chapter 9
Conclusion

9.1. SIGN LANGUAGE STUDY RESULTS WHAT?

In this book, I investigated modal particles and focus particles in signed languages. Inspired by results of a former study on modal meaning in DGS and ISL, I included NGT in the set of sign languages and created an elicitation battery to systematically scrutinize the languages with respect to modal and focus particles.

The three sign languages are used by deaf and hearing signers in Germany, the Netherlands, and Ireland. Basic information about the social and historical backgrounds of the languages and their users was provided in chapter 2. Apart from overall quite parallel historical developments, the three countries deal with the Deaf communities and their needs in slightly different ways. The organization of schooling institutions and the conditions for sign language acquisition, social commitment, and language policy are described for each country. From a linguistic perspective, the three sign languages have many common properties shared by most sign languages worldwide, but they also show language-specific idiosyncrasies. Summarizing the structural properties of the languages, I presented phonological characteristics, different verb signs of the three verb classes, morphological processes such as compounding, some examples of classifiers, aspectual markings, morpho-syntactic agreement patterns, different functions of nonmanual features, suggestions of basic word order properties, and further syntactic constructions. DGS and NGT are more closely related and similar to each other than DGS and ISL or NGT and ISL. Thus, a cross-linguistic comparison was expected to yield interesting results concerning the variation hypothesis.

The relevance of nonmanual features for this study required a detailed summary of the various functions that nonmanual features may have in sign languages. Chapter 3 summarized these functions explaining why nonmanuals are such an essential part of the language system. On all levels of grammar, nonmanuals play an important role and convey various meanings. Clearly distinguishable from affective facial expressions by scope, timing, and the systematicity in alignment patterns, the grammatical nonmanual features are used to express information on a lexical, morphological, syntactic,
and semantic-pragmatic level. Nonmanuals are analyzed either syntactically or prosodically in the literature. Depending on the framework, different authors argue for one or the other account. Recounting this debate about the correct analysis of nonmanual expressions as instantiations of syntactic features or as intonational tunes spreading along prosodic constituents, I set the stage for the discussions in later chapters. In addition, the idea that some nonmanual features behave similar to tones in so-called ‘tone languages’ was discussed from a typological perspective. Further research is needed to test the productivity of such distinctive nonmanuals that were found in various sign languages.

In chapter 4, I argued for methodological transparency, the collection and the analytic integration of meta data, and thorough processing and annotation of the video material. A comparative study requires comparable data from reproducible settings. The informants were native or near native signers and filled out a questionnaire to control the meta data and the language competences of the participants. An empirical approach does not deal with spontaneous speech, but elicits specific sentences, stories, and contexts by interviewing the signers according to a specific experimental design. Four different tasks including a picture elicitation task, a context creation task, a translation task, and a picture story task were the basis of a large amount of elicited data which were transformed into annotated videos. The annotated ELAN-files of the data set allowed a systematic search and evaluation and the thorough descriptions of the videos were used to analyze the results.

9.2. Modality and modal particles in sign languages

In chapter 5, I provided the relevant background information that was necessary to understand, elicit, and analyze modal meaning in signed languages. Taking a broad perspective, I discussed the universal concept of modality as it is outlined in spoken language linguistics and presented the various aspects that are subsumed under this notion. Defining modality as a semantic-pragmatic concept following Portner (2009), modality is a linguistic phenomenon expressed by various means - such as modal verbs, verbal inflection, sentential adverbs, specific syntactic constructions, and intonation - that allow someone to talk about things that are perhaps unreal. I explained the difference between deontic and epistemic modality and further subcategories as defined by different authors. I then narrowed down the issue to the specific
aspect of modality that I am interested in and defined modal meaning as a level of meaning that is induced by means such as modal particles, intonation, and sentential adverbs. Modal meaning is thus very context dependent and conveys degrees of probability, speaker’s attitude, and implicit updates to the common ground.

Concentrating on modal particles, I discussed the properties of particles in general and adopted a weak minimalistic view in defining particles as a word class and modal particles as an independent subgroup of particles. To distinguish modal particles from other particle classes, I discussed the lexical-morphological, syntactic, and semantic-pragmatic properties of modal particles.

As German and Dutch are both languages that exhibit various modal particles, I listed the different modal particles detected in each language and discussed the relevant items for this study. Lacking modal particles after all, English uses various means to express the meaning nuances that are triggered by modal particles in German and Dutch. As the data elicitation for the sign languages relied on a context creating task and not on a translation task of sentences including modal particles, the lexical items only played an implicit role. Nevertheless, the German control group showed that the context creation task elicited target sentences that included modal particles quite consistently, so that a comparison of the different means in both modalities was justified.

The actual results and the analysis of the elicited data for DGS, NGT, and ISL were presented in chapter 6. Even though research on modality in signed languages is quite scarce, some authors have investigated modality and modal verbs for ASL, BCSL, DGS, and LSE (cf. Ferreira-Brito 1990; Wilcox 1996; Schaffer 2002, 2004; Happ & Vorköper 2006; Wilcox & Schaffer 2006; Salazar 2008). Most work concentrates on modal verbs, their diachronic development, and the difference between deontic and epistemic modality. Except for Herrmann (2004, 2007), no systematic research on modal particles and modal meaning has been done in sign language linguistics. Initial findings suggested that modal particles have no lexical equivalents in DGS and ISL and that nonmanual features play an important role in the expression of these levels of modal meaning.

Searching sign language copora for modal particles did not provide fruitful results. The NGT corpus yielded various hits in the annotations, but it was difficult to define which item was a modal particle or a homonym. Furthermore, it was not possible to search the ISL corpus, as English does not have modal particles as such and the annotations did not include tagging for
modality related issues let alone modal particle equivalents. Therefore, an empirical elicitation task was required to gain the relevant data. A detailed description of the task, examples of the experimental design, transparent data about the informants, and the setting were each provided in a separate section. The contexts, the instructions, and the slides of the video session were explained and the categories of modal meaning, which were the essence of the task, were defined. The data set comprised 770 separate ELAN-files each containing one or more sentences that were annotated according to the transcription conventions presented in the appendix.

An extensive part of chapter 6 was dedicated to the data which formed the basis on which this research and the presented analysis was built. The target sentences consisted of minimal pairs in which regular sentences were opposed to identical but modally modified sentences. The latter were elicited with the use of specific contexts. The results of the task were illustrated for the three sign languages DGS, NGT, and ISL in a parallel fashion and detailed transcriptions systematically displayed the performances of the different participants. The replies were listed according to the five categories of modal meaning and included the relevant nonmanual features that were used.

First of all, the results yielded a nonmanual realization of modal meaning in all target sentences. Modal particles do not exist as lexical items in any of the sign languages of this study and the nonmanuals that were found to express the same meaning as the modal particles in German and Dutch spread across the entire sentence and were consistent with all signers. Clear on- and offsets and the systematic occurrence of specific facial expressions indicated a grammatical use of these features. Cross-linguistically, very similar nonmanual expressions were used for specific modal meanings in all of the three sign languages.

Taking into account recent literature, two options are generally available when analyzing nonmanuals. The findings were thus analyzed against two different theoretical accounts, a syntactic account and a prosodic account. This book therefore provides an innovative application of newly elicited data to linguistically relevant discussions and situates the findings in a contemporary debate discussing the syntax-phonology interface.

The syntactic account assumes a feature in a projection for mood in the left periphery. The spreading of the nonmanuals is usually taken to be determined by c-command or spec-head relation. The former would be applicable in the case of modal meaning. A prosodic account assumes spreading behavior along prosodic phrases such as phonological words, phonological phrases,
Focus particles in spoken and signed languages

9.3. Focus particles in spoken and signed languages

Like the two chapters on modality and modal particles above, I provided an overview of spoken language research concerning focus particles to present the tools that were tested, adopted, and adapted with regard to the sign language research in this study. The beginning of chapter 7 included terminological definitions, a thorough list of focus particle properties, and the relation between focus particles and its focus associate. Taking focus as an information structural and discourse relevant notion, I defined focus in classical terms as the highlighted part of a sentence that is generally taken to involve new information and is separated from the so-called ‘background’ of a sentence that is usually given (cf. Krifka 2006). The language-specific means to mark focus in spoken languages range from intonational means, morphological mark-
Focus particles are lexical items that relate to the focus of a sentence in a specific way. Depending on the focus constituent, focus particles may refer to the subject, the object, the verb, or the entire verb phrase. The respective focus constituent determines the alternative set in which the alternatives need to be of the same type. The focus particle denotes the relation between the focus constituent and its alternatives. Focus particles constitute three classes: restrictive, additive, and scalar. Except for restrictive focus particles such as *only* and *just*, focus particles have no effect on truth conditions. Due to the truth conditional effects of certain focus particles, however, focus particles represent a semantic type of focus usage rather than a pragmatic focus usage, such as, for example, information focus, contrastive focus, and corrective focus.

The three investigated items of this study were *only*, *also*, and *even* as they are the prototypical examples of focus particles. They represent each class because *only* is a restrictive focus particle excluding all other alternatives from the alternative set whereas *also* is additive in nature. The particle *even* is an inherently scalar focus particle that adds at least one alternative to the focus constituent like additive particles and furthermore posits the focused item on a scale. The semantics of these words show the different levels of meaning such as entailment, presupposition, and conventional implicature. The disagreement on the various notions in the vast amount of literature is briefly summarized in this chapter, but it was sufficient for the purpose of this research to clearly separate the different levels of meaning and follow the traditional definitions.

From a syntactic point of view, two opposing theories were discussed to provide the tools for a detailed syntactic analysis of focus particles in sign languages. The adverbial-only account proposed by Büring & Hartmann (2001) suggests a phrasal status of focus particles and provides a theory of adverbial attachment for all focus particles in German. A mixed account principally valid for English, on the other hand, was adopted for German by Bayer (1996) and was further specified by Bayer & Obenauer (2008). Based on a one-constituent assumption, the representatives of the latter theory assume adnominal attachment of the focus particle to its focus constituent. The discussion of the pros and cons of the theories indicated that both positions claim to have knock-out arguments against the other camp. Thus, despite the effort
and high amount of work that was done to analyze focus particles, spoken language accounts did not yet fully solve the problem for German and English.

Focus particles have not yet been extensively studied for many sign languages. Chapter 8 includes a core part of the study and investigates focus particles in DGS, NGT, and ISL. Introducing some of the work on focus and focus particles in ASL, LSB, DSL, NGT, and DGS, it becomes obvious that focus in sign languages is expressed by intonational means, manual modifications, and sometimes also syntactic constructions. Different studies have investigated the prosodic correlates of focus in sign languages and across sign languages. They emphasize the different means that may vary according to the focus constituent. A combination of manual and nonmanual means were described for most of the investigated sign languages showing that the markers may be punctual and spreading in nature.

Focus particles in sign languages relate to the focused part of the sentence and initial findings have suggested that lexical items such as ONLY (only) and SAME (also) in ASL are used as focus particle items. In ASL, even was said to be expressed by a combination of the manual additive sign SAME and a forward body lean. Happ & Vorköper (2006) listed focus particles for DGS such as NUR1 (only) and DAZU (also) and mentioned the sentence-final occurrence of the former and the preceding and adjacent position of the latter. Furthermore, a focus pronoun indicating restrictiveness and usually glossed as SELBST (self) is discussed as an alternative option to express only. A corpus search for focus particles in the NGT corpus yielded 8 instances of ALLEEN (only) and 53 instance of OOK (also), but no sign for zelfs (even). Less frequent results were found for ISL (two ONLY, five JUST, three SAME, and one E.V.E.N.). These results only give a first impression on how focus particles are expressed in sign languages. The empirical research presented in this book was the first systematic investigation into focus particles and their distribution that consistently tested different focus constituents and their interaction with the three particles only, also, and even.

The elicitation procedure for these focus particles included three different tasks: a picture elicitation task, a translation task, and a picture story task. Additional questions combined all focus particles in one dialog. Metadata about the informants, the experimental design, the respective materials, and the interviewer’s instructions were explained in detail to guarantee transparent data elicitation. The data comprised 405 annotated ELAN-files including focus particle sentences.
The transcriptions of the relevant results for DGS, NGT, and ISL were systematically displayed for all of the three tasks. The responses from the German control group were explained in a parallel fashion. To summarize the basic findings for focus particles in the three sign languages, table 34 provides a simplified overview (in this chart, ‘+’ means additional nonmanual features). For a description of the individual features, see the respective sections in chapter 8. In addition, contrastive constructions were sometimes used to express restrictive or additive meanings. This, however, was excluded from the focus particle analysis.

Table 34. Summary of the focus particle results

<table>
<thead>
<tr>
<th>SL/FP</th>
<th>Restrictive</th>
<th>Additive</th>
<th>Scalar</th>
</tr>
</thead>
<tbody>
<tr>
<td>DGS</td>
<td>NUR(_1), NUR(<em>2), IX</em>{dem}</td>
<td>AUCH, DAZU</td>
<td>AUCH+, AUCH</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>DAZU+, NMFS, PF</td>
</tr>
<tr>
<td>NGT</td>
<td>ALLEEN, EEN</td>
<td>OOK(_1), OOK(_2)</td>
<td>OOK+, NMFS</td>
</tr>
<tr>
<td>ISL</td>
<td>ONLY, JUST, ONE,</td>
<td>ALSO, SAME, SAME-TIME, SAME+</td>
<td>SAME-TIME+, AH, E.V.E.N.</td>
</tr>
<tr>
<td></td>
<td>COMPLETION</td>
<td>AS-WELL</td>
<td></td>
</tr>
</tbody>
</table>

The analysis of focus particles in DGS, NGT, and ISL centered on the syntactic analysis of various distributional properties of the different items that were found. Equipped with the analytic tools presented in chapter 7, I argued for an adverbial analysis of most of the particles such as DGS NUR\(_2\), AUCH, and DAZU, NGT OOK\(_1\) and OOK\(_2\), and ISL ONLY, JUST, SAME, and SAME-TIME. The spreading behavior of nonmanuals concerning even-sentences provided evidence for the assumption of adverbial projections within the tree structure above VP and IP. The assumed XP status was explained by various combinatory patterns that seem to extend the dominating focus particle.

For focus particles such as NUR\(_1\) in DGS and most probably COMPLETION in ISL, however, it was argued that these markers grammaticalized from temporal aspect markers, which again evolved from nouns. The sentence-final focus particles were analyzed as occupying a right functional category C° of CP. Their status was analyzed in terms of an X° category as these sentence-final focus particles are related to functional aspect markers and cannot combine. If such a focus particle appears at the end of a sentence, other sentence-final wh-elements or modal verbs are blocked. This shows that the C° position is already occupied by the focus particle. These findings are in accordance with independent syntactic analyses of ASL, DGS, and LSB, for instance, and sup-
port this syntactic account. Furthermore, the data show that the C° position is related to focus, as noted by other sign language linguists (cf. Sandler & Lillo-Martin 2006).

Further combinatory constructions where NUR₁ and NUR₂ appear in the same sentence were thus analyzed by combining the two above mentioned approaches. In rare cases related to clear emphasis, NUR₁ sometimes occurred adjacent to and following its focus constituent. Syntactically, this was explained by DP or PrtP internal movement of the focus NP across the focus particle in X° position (see Wilbur & Patschke 1999 for sign languages and Bayer & Obenauer 2008 for spoken languages). The examples in the data set show such clear emphatic markings resulting in a special emphatic interpretation of the utterances.

In the subject-focus condition of the tasks, additive particles sometimes followed their focus associate. These post-focal additive particles such as DGS AUCH were accounted for by information structural arguments and a syntactic topicalization of the subject NP. The additive particles in these cases bear focus themselves and receive focus marking. This construction is semantically different to the sentence where the particle precedes the subject. In accordance with Krifka (1998) and Féry (2012), I assumed a regular adverbial position for the additive particle and a topicalization of the subject as a contrastive topic. It is noteworthy that the various focus particle items and their different distributional options may be accounted for syntactically, if information structural and prosodic aspects are taken into account.

Concerning the third investigated focus particle, the three sign languages expressed scalar even through means of manual additive particles in combination with specific nonmanual means such as raised eyebrows, wide eyes, and head tilts (usually forward or upward). These nonmanuals start with the focus particle and spread along the rest of the sentence, which contains or is itself the respective focus associate. An interesting aspect of the manual and nonmanual combination to express even is the fact that sign languages use different articulatory channels to convey the meaning of two different semantic features.

Sign languages use their three dimensional modality to represent the different levels of meaning by different syntactic features that find their instantiations in different phonological articulations, whereas spoken languages usually have a single lexical item to express both meaning levels of scalar focus particles. If we assume that sign and spoken languages are not completely different typologically, it would be interesting to see whether some spoken
languages similarly distinguish the additive and scalar meanings and use morphologically or prosodically different expressions. It can be concluded that it is not just about manual ONLY and ALSO, as it is not only the hands that count in sign languages.

9.4. Outlook for further research

The results summarized above clearly contribute to recent research on sign language linguistics and show how the three dimensional languages use their various articulators to convey meaning that spoken languages usually express through lexical and morphological markers. The findings for modal particles clearly show that in spoken languages, the interaction of modal particles and intonational means have to be taken into account in more detail. Modal particles constitute a subpart of the actual meaning that is conveyed. Similar to the various nonmanual features that can be combined, modal particles interact with different linguistic means and different levels of meanings. Spoken language research may benefit from the detailed investigation into sign languages and the different articulatory channels.

Concerning the debate on the syntax-prosody interface, it would help to scrutinize sentences that show non-isomorphism between syntactic and prosodic phrasing in relation to the spreading behavior of nonmanuals. It would be interesting to see how relative clauses and modal meaning interact. Furthermore, embedding in relation to modal meaning is a promising topic, as the spreading of nonmanuals across matrix and embedded clauses would give further insights into syntactic features and interpretation differences.

The modal meaning task only elicited a subset of all possible realizations of modal meaning and aimed at investigating the specific meanings triggered by particular modal particles and their equivalents in the languages of this study: DGS, NGT, and ISL. Additional contexts need to be incorporated in elicitation materials to more systematically define modal meaning contributions and situational variation. Thus, this study is a first thorough investigation into modal meaning and modal particles in sign languages and follow up research is most welcome.

For focus particles, it would be interesting to typologically compare the findings to a broad variety of spoken languages to see whether tone languages express a scalar meaning by tonal variation, for instance, or how intonation is used linguistically to encode meaning that has not yet been investigated in de-
Outlook for further research

...tail. If spoken languages similarly decompose the meaning components with lexical and intonational means, the simultaneous use of nonmanuals in sign language might after all not be as modality-specific as it seems. In general, we do not want to assume a typologically different behavior between spoken and signed language. On the other hand, it would be quite compelling to search for further examples from spoken languages that syntactically combine semantic features in a single word whereas sign languages divide these levels of meaning into various syntactic features and articulatory instantiations.

Some open questions that arose as side topics of the analysis deserve further research. A fascinating issue is related to a lexical item in DGS that was used as an alternative construction for the even-sentences and was often used in combination with the additive particle and the nonmanuals. This PF-sign was prosodically separated from the sentence when occurring sentence-finally, but could also be used sentence-initially or sentence-internally. In the latter cases, the sign was prosodically linked to the sentence or the focus constituents. An analysis of this item that is often called a specific sign of DGS or an idiom is still missing and would be a quite challenging issue.

As a general outlook, some aspects with regard to data and methodology could be improved. I mentioned a picture elicitation task for German nur (only) that elicits language acquisition data with children. It is important to test these picture elicitation tasks from acquisition studies and see if they can also be used for sign language studies. Thus, an improved elicitation battery could explain unresolved issues such as certain combinatory patterns of focus particles and the rather vague semantic definitions of individual nonmanual features for modal meaning. A more systematic categorization of further aspects of modal meaning could bring to light a more sophisticated picture of these meaning components.

This study has explicitly tested native and near-native signers to investigate native language structure. Further projects might now oppose the results from native signers to those of non-native signers, hearing late learners, and bilinguals, for instance. As late signers are said to have difficulties using grammatical nonmanuals, it may be expected that late learners do not use the features correctly or at least inconsistently in some of the cases. This would further support the findings that native status and an early exposure to sign language is important to test the systematic and grammatical use of certain nonmanual features.

In sum, the results discussed in this book provide an important contribution to the linguistic description of the grammars of DGS, NGT, and ISL.
Conclusion

With respect to modal particles, modal meaning, and focus particles, the sign languages showed greater similarities than the respective spoken languages. Thus, the findings support the variation hypothesis in this respect. The similar results concerning focus particles are due to the simultaneous structure of sign languages in general. This modality effect is a surface phenomenon resulting in a similar combinatorial use of different articulators, but the individual signs and phonological instantiations are language-specific. Concerning modal meaning, most of the meaning attributions of individual features apply to all of the three sign languages. Thus, due to the gestural origin of nonmanus, the grammaticalized facial expressions have the same or similar meanings in these languages and a few other languages for which some of these definitions have already been stated. In other sign languages with different cultural or historical backgrounds, however, this might be different. More typological studies would clarify the matter.

This book further contributes to recent discussions about the syntax-phonology interface as well as the syntactic tree structural issue of a left Spec-CP and a right C° in many sign languages. The implementation of adverbial phrases in the sign language structures have not been analyzed in detail before and the spreading of nonmanus for other adverbials may further explain the interaction of manual and nonmanual means. Apart from the new findings of this investigation, the project points towards an area of research that integrates all levels of meaning and the interfaces between syntax, semantics, and pragmatics. Information structural and prosodic aspects have an impact on interpretation and theoretical analysis and need to be considered equally. Thus, this book promotes the analysis of transparent data and takes into account all sign language articulators and their interaction on various levels of the grammar.