Chapter 3  
Nonmanuals in sign languages

Signs are said to be the signed equivalents to words. Even though this comparison is not correct considering the different morphology of signed and spoken languages, words are generally used to describe and gloss signs. As sign languages do not have an established written system that can be read and understood by everyone, the word glosses indicate the basic meaning of a sign and represent the structure of it without giving any information about the phonological structure and what the sign looks like.

Handshape, hand orientation, location, and movement are the phonological components of a sign. Minimal pairs can be found for each phoneme making the four manual components distinctive phonological features of signs (cf. Stokoe 1960; Boyes Braem 1995; Brentari 1998; Sandler & Lillo-Martin 2006, among others). However, sign languages are not just made of manual signs. The languages in the visual-manual modality have complex grammars that include nonmanual features which are necessary for the interpretation and the analysis of signed utterances. Nonmanual features as the word itself suggests are expressions that are not performed with the hands. Body movements, head movements, and facial expressions in their versatility are ‘nonmanual’.

Linguistic studies have shown that these nonmanual expressions in sign languages invaluably contribute to the language system. This chapter deals with nonmanuals in their various forms and functions. Nonmanuals are important for the expression of modal meaning as well as for specific aspects of focus particles and therefore they are an extremely relevant issue of my studies. Section 3.1 discusses whether or not everything that is not performed by the hands may be called ‘nonmanual’. Furthermore, I provide an overview of nonmanual expressions and the different functions they may convey. The distinction between affective and grammatical nonmanuals is discussed in section 3.2. In section 3.3, examples from DGS, NGT, and ISL show specific nonmanuals and how they are used in these sign languages. Generally, in different sign languages, nonmanuals have similar functions, but might differ in their realizations and the constraints they are subject to. In section 3.5, I point towards recent findings that nonmanual features may also be lexically and grammatically distinctive and may behave similarly to tones or tone con-
tours in so-called ‘tone languages’. I briefly describe these approaches and discuss the implications that this idea might have for sign language linguistics. I then turn to the question how nonmanuals are related to modal meaning and focus particles and present my assumptions and hypotheses with regard to these issues in section 3.6. This study investigates whether nonmanuals are used for these purposes and if yes, why and to what extent they are important for the realization of particles. A central issue will be whether or not they play a grammatical role with respect to focus particles and/or modal particles. These are highly interesting questions and require a thorough overview of nonmanuals and their functions. Section 3.7 gives a brief summary of the chapter.

3.1. Nonmanuals - Everything that is not manual?

Studies of signed languages have shown that nonmanual expressions may function as grammatical markers and operate on different levels of the grammar. The term ‘nonmanuals’ means that these expressions are performed without using the hands (manus, lat. = hand). As a terminological fact, however, not everything that is non-manual is subsumed under the term ‘nonmanuals’. Lower body movement by the legs, feet, and hips, for example, are principally non-manual, but usually not tagged ‘nonmanual’. Rather, all upper body movements including the head and the face are discussed under this notion in sign language research. These nonmanual expressions may have both affective and grammatical functions. Nonmanual articulators that are used for grammatical purposes are restricted to the upper body (torso), the head, and the face in most sign languages and therefore, they are the primary features discussed under the concept ‘nonmanuals’. The following list in table 1 indicates which kind of nonmanuals are thoroughly discussed in the literature as they are used for various purposes in sign languages.

As can be seen in this list, sign languages make use of various articulators that could be arranged on a continuum from vast and most visible means on the one end to small and subtle means on the other. Both the movements of the entire torso and the tiny eye aperture differences may convey linguistic information that is relevant to sign language grammar. However, like with hearing speakers and every person that communicates, facial expressions and other nonmanuals like body and head movements may also express emotions, reactions to physical triggers, and nonmanual gestures (cf. Herrmann
3.2. Affective or grammatical - How can we tell?

When discussing nonmanual features and their role in sign language grammar, it is important to introduce a few aspects of simultaneity and sequentiality in a three-dimensional modality. Simultaneity is achieved by the layering of different articulators in a multichannel system. Nevertheless, signs are produced in time, which shows the sequentiality of signed utterances. Sign languages combine these two aspects in a typologically unusual way and use the modality-specific advantages in a fascinating manner (cf. Aronoff et al. 2005). Table 2 briefly surveys a few simultaneous and sequential aspects concerning phonology, morphology, and syntax.

With regard to phonology, the so-called ‘Hand Tier Model’ integrates the above mentioned aspects in a model of manual sign formation and combines the sequential syllable structure with location and movement features and hand configurational properties (cf. Sandler 1999; Sandler & Lillo-Martin 2006). From a morphological perspective, it can be noted that we find a high simultaneous morphology, but a restricted sequential morphology in sign lan-

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**Table 1. Nonmanual articulators for grammatical purposes**

<table>
<thead>
<tr>
<th>Category</th>
<th>Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>Body</td>
<td>forward and backward body leans</td>
</tr>
<tr>
<td></td>
<td>sideward body leans</td>
</tr>
<tr>
<td></td>
<td>shrugged shoulders</td>
</tr>
<tr>
<td>Head</td>
<td>head nods, head shakes, and head tilts</td>
</tr>
<tr>
<td></td>
<td>head and chin movements and positions</td>
</tr>
<tr>
<td>Face</td>
<td>eye aperture</td>
</tr>
<tr>
<td></td>
<td>eye gaze and eyebrow movements</td>
</tr>
<tr>
<td></td>
<td>forehead frown</td>
</tr>
<tr>
<td></td>
<td>mouth, lips, and tongue movements and positions</td>
</tr>
<tr>
<td></td>
<td>cheeks and nose movements</td>
</tr>
<tr>
<td></td>
<td>general facial expressions</td>
</tr>
</tbody>
</table>

& Pendzich in press). Even though the articulation channels are the same for both the affective and the grammatical usage of nonmanuals, they can be distinguished by different criteria. This will be explained in the next section.
Table 2. Simultaneity and sequentiality in sign languages

<table>
<thead>
<tr>
<th></th>
<th>Simultaneity</th>
<th>Sequentiality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phonology</td>
<td>2-handedness, hand configuration, and nonmanuals</td>
<td>movement patterns and locations</td>
</tr>
<tr>
<td>Morphology</td>
<td>movement change</td>
<td>reduplication, affixation</td>
</tr>
<tr>
<td>Syntax</td>
<td>layering and spreading of nonmanuals</td>
<td>sign/word order</td>
</tr>
<tr>
<td>Examples</td>
<td>agreement, classifiers, aspectual information, sentence types, intonation contours, etc.</td>
<td>syllable structure, plural formation, compounding, derivational aspects, word order, etc.</td>
</tr>
</tbody>
</table>

The simultaneous change of hand movement may express agreement and aspectual information, whereas sequential aspects such as reduplication are used for pluralization, for instance. The sequential production time and the sequences of signs play an important role with respect to compounding and generally word order in sign languages. Syntactically, the layering of nonmanuals across manual signs is a highly relevant aspect of simultaneity as nonmanual features may spread across constituents and clauses to mark syntactic structure. As section 3.3 illustrates, however, nonmanuals play a role on all levels of grammar. To understand nonmanuals in sign languages, it is important to provide independent evidence that they are grammatical and not gestural in nature. Distinctive categories, functional differences, grammaticalization processes, language acquisition data, and neuro-psychological evidence have been discussed to effectively show that the hypothesis of grammatical nonmanuals is correct.

Even though distinguishing between affective and grammatical facial expressions is difficult insofar as the production is transmitted via the same articulators, there are clear conditions and rules to tell those features apart. Most importantly, they differ in their scope and timing. In addition, different facial muscles are used for affective and linguistic means (cf. Reilly et al. 1990; Corina et al. 1999). “Grammatical facial expressions have a clear onset and offset, and they are coordinated with specific constituent structures. Affective or attitudinal expressions have more global and inconsistent onset and offset patterns, and they are not timed to co-occur with specific signs or constituents” (Emmorey 1999: 150-151). In other words, if nonmanual features are used grammatically, the on- and offsets are abrupt and exact, and if they
are used affectively they are gradual and vague (cf. Wilbur 2003: 337). The timing and the coordination in connection with a constituent are of distinctive importance. Furthermore, linguistic expressions usually comprise only a few restricted facial articulators (cf. Baker-Shenk 1983). If nonmanual features show patterns according to the above mentioned characteristics of linguistic features, they can be analyzed as an integral part of sign language grammar.

Testing reliable intuitions is a further option to find out about the status of facial expressions. “There are non-obvious constraints on the form of signs and signers have clear intuitions about what is permissible and what is ill-formed. Such is not the case for gesture” (Emmorey 1999: 135). These constraints are consistent with signers of the same sign language, and the intuitions of native signers along with their grammaticality judgments provide a clear indication as to whether an utterance is grammatically correct or not. “Signers do not vary in their use of obligatory grammatical facial expression” (Emmorey 1999: 153).

I exemplify the above described difference with a specific phenomenon in sign languages called ‘role shift’ (for examples see section 3.3 below). Emmorey (1999) shows that in narratives, facial expressions often reflect emotions or feelings of characters who are the active participants in a story. While regularly signing what the participant says or does in a story (reporting speech or actions), the face often mimics the face of the character. To indicate such a perspective shift in the first place, a signer uses nonmanual features like body movement, head movement, and - in case of quotation - most importantly a break in eye gaze away from the addressee towards a point in the sign space that represents the imaginary addressee of the quoted situation. This so-called ‘quotational role shift’ is a grammatical and linguistic device of sign languages. The grammatical nonmanuels have clear on- and offsets, and the nonmanuels spread across the entire utterance that signals someone else’s utterances. A statistical evaluation of role shift examples in my data set gives further support for analyzing role shift as a grammatical device. The nonmanuels are ordered according to a specific hierarchy that shows the systematic and obligatory use of eye gaze in role shift (cf. Herrmann & Steinbach 2007, 2010). The facial expressions mimicking the character can be added, but remain optional and very often inconsistently spread over only certain signs. Thus, the facial expression reflecting emotions or feelings within quotational role shift is non-linguistic (cf. Emmorey 1999: 152). Quotational role shift and constructed action have been further investigated for different sign languages (cf. Padden 1987; Lee et al. 1997; Quer 2005, 2011; Pyers & Sen-
It is an interesting fact that many grammatical facial expressions originate in facial gestures (cf. Janzen & Schaffer 2002; Wilcox 2004, 2007). Raised eyebrows are an example of a grammaticalized facial gesture that found its way into sign language grammar and now functions as a topic marker and an indicator of polar questions in different sign languages. Therefore, it is possible that some facial expressions in certain younger sign languages, for instance, may be on the verge of being grammaticalized and are thus difficult to define and categorize. This complicates the differentiation between affective and grammatical features, but the above mentioned criteria - such as clear on- and offsets, alignment with constituents, and systematic intuitions and usage - still hold and result in a division between the two. Additional evidence comes from acquisition data, where children first use inconsistent facial gestures and only later systematically use the facial expressions as grammatical markers (cf. Reilly et al. 1990; Emmorey et al. 1995).

From a neuro-psychological perspective, studies have indicated that grammatical facial expressions are processed left hemispheric in language production and perception areas of the brain. Affective facial gestures, on the other hand, activate the right hemisphere of the brain (cf. Poizner et al. 1987; Corina et al. 1999; McCullough et al. 2005; McCullough & Emmorey 2009). These results further enhance the findings that facial expressions fulfill grammatical functions in many cases.

Thus, from different areas of linguistics, there has been strong evidence for the grammatical status of various nonmanual features in sign languages. In the following section, I discuss the different functions that these grammatical nonmanuals may have and provide examples from DGS, NGT, and ISL.

### 3.3. Functions of nonmanuals in DGS, NGT, and ISL

Nonmanual features constitute an important part of the grammar in all sign languages investigated up to now. They operate on all levels of grammar and may fulfill lexical, morphological, syntactic, and semantic-pragmatic functions. The specific purposes that nonmanuals have are explained below in relation to each linguistic module. In this section, I primarily discuss the functions of nonmanual features with respect to DGS, but I include examples from NGT and ISL whenever appropriate. Sign languages usually do not differ in
the categorical functions that nonmanuals convey, but in the realizations and instantiations of specific nonmanuals.

The nonmanual features mentioned in section 3.1 may convey various possible functions, and are listed in table 3. Please note that some aspects may fall under more than one of the mentioned categories. Agreement marking is classified as morphological, but might better be described as a morphosyntactic phenomenon. Topicalization is a kind of syntactic fronting, but also semantic-pragmatic in nature because of the information structural properties. I explain the individual items below and give examples from the sign languages under consideration.

Table 3. Functions of nonmanual features

<table>
<thead>
<tr>
<th>Category</th>
<th>Functions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lexical</td>
<td>nonmanuals inherently linked to a lexical item</td>
</tr>
<tr>
<td></td>
<td>distinctive nonmanuals</td>
</tr>
<tr>
<td>Morphological</td>
<td>adjectival</td>
</tr>
<tr>
<td></td>
<td>adverbial</td>
</tr>
<tr>
<td></td>
<td>agreement marking</td>
</tr>
<tr>
<td>Syntactic/intonational</td>
<td>sentence types</td>
</tr>
<tr>
<td></td>
<td>subordinate clauses</td>
</tr>
<tr>
<td></td>
<td>negation</td>
</tr>
<tr>
<td></td>
<td>topicalization</td>
</tr>
<tr>
<td></td>
<td>role shift</td>
</tr>
<tr>
<td>Semantic-pragmatic</td>
<td>information structure</td>
</tr>
<tr>
<td></td>
<td>modality</td>
</tr>
<tr>
<td></td>
<td>speaker’s attitude</td>
</tr>
<tr>
<td></td>
<td>counterfactuality</td>
</tr>
<tr>
<td>Non-linguistic</td>
<td>affective</td>
</tr>
<tr>
<td></td>
<td>emotional</td>
</tr>
</tbody>
</table>

Lexical: As mentioned above, grammatical nonmanual features encode various functions. First of all, nonmanuals are an elementary component of many lexical signs. These nonmanual markings such as lexical facial expressions, head- and body positions or movements, and mouth gestures are obligatorily linked to lexical entries of signs and are generally not productive. Thus, many signs are lexically specified for their accompanying nonmanuals and we find these kinds of lexical nonmanual features in all sign languages. Usually, nonmanuals alone cannot be lexical signs. Dively (2001) reports on some instances of nonmanual signs, but these cases constitute a limited sam-
ple of conventionalized expressions. These forms do not seem to be lexical in the strict sense and are rather used for discourse structural purposes.

In DGS, the sign SCHLANK (slim) requires both cheeks to be sucked in and EBEN-GERADE (just-recently) is signed with the tip of the tongue slightly protruded from the corner of the mouth (see figure 8).

![SCHLANK (slim) EBEN-GERADE (just recently) TRAURIG (sad)](image)

*Figure 8. Lexical nonmanual features in DGS*

The lexical entry for the sign TRAURIG (sad) exhibits corresponding facial expressions that accompany the manual sign, whereas a happy smile would be lexically inappropriate and would not mean *sad*. Interestingly, some of these nonmanual expressions even distinguish between otherwise identical lexical signs.\(^\text{18}\)

In NGT, specific negative nonmanuals obligatory accompany the sign KWAAD (angry, evil, bad) and a fearful expression together with a head tilt forward inherently belongs to the lexical sign BANG (scared). Similarly, a merry facial expression is stored in the lexicon entry for VROLIJK (see figure 9 for these examples taken from www.kegg.nl (©KEGG)). In most sign languages, nonmanual articulators such as the cheeks, the mouth, facial expressions, and body posture convey these lexical functions.

In ISL, the same applies for the sign SUFFER and the linked facial expressions, which are illustrated in figure 10. Specific nonmanuals are also obligatorily required when signing HATE. Similar to EBEN-GERADE (just recently) in DGS, the sign RECENTLY in ISL is accompanied by a specific mouth gesture that can be intensified to mean VERY-RECENTLY (see figure 10). The pictures are taken from Matthews & ÓBaoill (2000: 23,124,154) with the friendly permission of the authors. In addition to the manual components of a sign, nonmanuals play an equally important role and are stored in the mental lexicon together with many signs.
Morphological: Nonmanuals are very important features with regard to morphological processes concerning aspect, mood, and tense. Aspectual information may be conveyed nonmanually and tense markers such as a single head nod on specific verbs are used for past tense marking in DGS. Mood is often realized by nonmanual features as well. In ISL, for example, we find so-called ‘manner markers’. Matthews & ÓBaoill (2000: 162) list four facial expressions that show the actual performance of the person during the verbal action that is signed. Thus, they are aspectual markers. Examples are the ‘th’ marker, which is a clumsy marker and ‘ee’, which is an intensifying marker. The marker ‘oo’ marks thin and delicate issues and the abbreviation ‘um’ stands for a so-called ‘disappearing’ marker. The aspectual manner markers are illustrated in figure 11 taken from Matthews & ÓBaoill (2000: 162) with the friendly permission of the authors.

Furthermore, nonmanuals may fulfill adjectival and adverbial functions in sign languages. The sign HOUSE may be signed with sucked in cheeks to indicate a small house and with blown cheeks to indicate a big house. Adverbs usually accompany and modify the verb. They are productively used and simultaneously layered on top of the manual verbal base. Many nonman-
ually realized sentential adverbials, however, spread across the entire sentence. Some classic adverbial functions in DGS are illustrated in figure 12, taken from Steinbach 2007: 148.

Figure 12. Nonmanual adverbs in DGS

Another recently debated phenomenon is the fact that the nonmanual feature eye gaze may be used for agreement marking in relation to agreement verbs. Neidle et al. (2000) were the first to analyze eye gaze as an agreement marker. Eye gaze shifts towards the objects during verbs in ASL. Thompson et al. (2006) and Hosemann (2009) have conducted eye tracking experiments investigating verbal agreement in ASL and DGS. Even though it does not seem to be an obligatory marker in DGS, the tendency correlations concerning the different verb classes are quite systematic. If a gaze occurs on a verb,
it is determined by the manual agreement and aligns with the duration of the path movement (cf. Hosemann 2009). It can thus be concluded that eye gaze change generally is a way of marking agreement, but, as such, not a necessary condition for grammatical agreement. In ASL, however, eye gaze change to mark agreement seems to occur more frequently than in DGS.\textsuperscript{19}

Syntactic: nonmanual expressions have also been analyzed as indicators of syntactic constituents and clausal constructions. First of all, nonmanual features distinguish between sentence types in many different sign languages. If the same string of signs is accompanied by raised eyebrows and a forward head tilt in DGS, a declarative is changed into a polar question. Yet another combination of that sentence with specific nonmanuals evokes an imperative reading. As mentioned in chapter 2 above, content-questions and polar-questions are differentiated by nonmanuals and the fact that wh-interrogatives usually contain wh-elements. However, some wh-interrogatives lack overt wh-words and can be marked by the respective nonmanual expression alone.

Nonmanuals are also used to mark subordinate structures such as relative clauses, conditional clauses, and quotation. In addition, topicalization, negation, and parentheses require particular nonmanuals in DGS and many other sign languages. In DGS, relative clauses usually have two different manual relative pronouns (\textit{REL_{PRO}}), one for humans and one for objects or abstract entities, but they additionally show specific nonmanual markings (cf. Pfau & Steinbach 2005). Conditional clauses, however, are marked solely by nonmanual expressions. The condition (protasis) is accompanied by raised eyebrows (‘r’) and the consequent (apodosis) obligatorily requires a head nod (‘hn’) in DGS. The conditional relation is thus indicated by nonmanuals alone (see example (6) and also Happ & Vorköper 2006).\textsuperscript{20} Without these markers, the sentence would be a mere coordination.

\begin{center}
\begin{tabular}{ccc}
\textit{r} & \textit{hn} \\
\textit{IX\textsubscript{2}} & \textit{GESUND} & \textit{WIR} & \textit{URLAUB} & \textit{FAHR} \\
\end{tabular}
\end{center}

\begin{center}
you healthy : we holiday drive
\end{center}

\begin{center}
‘If you are fit, we will go on holiday.’
\end{center}

In addition, sentential negation in DGS requires an obligatory head shake at least over the verb (cf. Pfau 2008). Manual negation signs can be used, but are optional. Negation in many sign languages has been analyzed as split negation, as two negation elements (manual and nonmanual) play a role in sentential negation.\textsuperscript{21} Even though ASL exhibits the same kind of split nega-
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tion with manual negation signs and nonmanual head shake, the constraints are completely different with respect to the optionality of the manual negation signs and the spreading options of the head movement. Interestingly, in ASL, the head shake does not necessarily accompany the verb as in DGS. This is also the case for Catalan Sign Language (LSC), where the head shake on the manual negation sign is sufficient. Furthermore, a head shake is not universally involved in sign language negation. Indo-Pakistani Sign Language (IPSL), for instance, negates sentences by an upward head tilt (cf. Zeshan 2004a). If negation involves obligatory nonmanuals, we refer to the languages as ‘nonmanual dominant sign languages’. Sign languages such as Italian Sign Language (LIS) that simply negate sentences by the use of obligatory manual signs, are called ‘manual dominant sign languages’ (cf. Zeshan 2006; Pfau 2008). Thus, the markings and realizations of negation in sign languages are definitely language-specific, even though nonmanual features play an important role. As mentioned in section 3.2, nonmanuals are also used to mark quotation and perspective shifts. I briefly present two examples from DGS to show indirect speech (7) and quotational role shift (8) and how nonmanuals interact with the quoted material.

(7) \[ \text{PETER IX}_3 \text{ SAG IX}_3 \text{ BUCH LES} \]
\[ \text{peter ix}_3 \text{ say ix}_3 \text{ book read} \]
‘Peter says that he reads a book.’

As previously described, the modality-specific way of quoting the thoughts or utterances of others is called ‘quotational role shift’. The nonmanuals used to express role shift fulfill the requirements of grammatical nonmanual features as they can spread across clausal structures, may be layered on manual signs, and convey a specific function. The nonmanual expressions such as an eye gaze change, head position change, and a shift of the upper body are indicated by the abbreviation ‘rs’ in the transcriptions of example (8). The systematicity of the marking provides evidence for a grammatical interpretation. The indexicals in the scope of the nonmanuals are interpreted in the shifted context. Thus, \( I X_1 \) refers to the signer of the quoted situation.

(8) \[ \text{PETER IX}_3 \text{ SAG : IX}_1 \text{ BUCH LES} \]
\[ \text{peter ix}_3 \text{ say : ix}_1 \text{ book read} \]
‘Peter says: I read a book.’
Semantic-pragmatic: From a semantic-pragmatic viewpoint, nonmanuals are used to express information structural issues such as focus and topic. Topicalization, for instance, is often marked by raised eyebrows in various sign languages and the brow raising accompanies the entire topic constituent. For ASL, different nonmanuals have been postulated to mark different types of topics such as moved and base generated topics (cf. Aarons 1994; Sandler & Lillo-Martin 2006). Topics are mostly analyzed syntactically, even though they show discourse linking functions and can be defined via notions of givenness and aboutness. Focus is usually defined as a semantic-pragmatic phenomenon, but may also have syntactic consequences in certain languages. These information structural notions interact with all levels of grammar (see Krifka 2006 for an overview and section 7.1.2 in chapter 7 for a definition of terms and an explanation of focus). I present the work on focus in sign languages in section 8.1 of chapter 8. Initial studies on information structure and modality, for instance, clearly show how relevant nonmanual features are to realize semantic-pragmatic aspects in sign languages.

To round up the list of functions that nonmanuals convey, it shall be repeated that, self evidently, non-linguistic, affective, and emotional reactions shown by facial expressions are equally possible in both spoken and signed languages. Irony and sarcasm can be transmitted via face, eye gaze, and body behavior and both speakers and signers use affective facial and nonmanual gestures to convey paralinguistic information. In general, nonmanual marking is often compared to intonational means in spoken languages. As can be seen with distinctive intonation contours for polar questions or intonation concerning expressives, exclamatives, and echo questions, the effect of intonation plays an important role in spoken languages as well. The results from sign languages might thus lead researchers to reconsider the importance of intonational aspects for spoken language analysis.

Summarizing this section, it is important to note that nonmanuals are an integral part of sign language grammar. They contribute invaluably to sign language production and perception and grammatically encode various aspects of phonology, morphology, syntax, semantics, and pragmatics. The system of nonmanuals is also taken into account when analyzing modal particles and focus particles in this book, as nonmanuals play an important role in the realization of these phenomena in sign languages. Relating to the above mentioned issues, in section 3.4 below, I briefly discuss different theoretical approaches that analyze nonmanual features.
3.4. Analyses of nonmanuals in sign languages

Nonmanuals have been approached in two different ways. On the one hand, researchers analyze the nonmanual expressions as spell-out phenomena and instantiations of syntactic features such as topic features, interrogative features, etc. On this view, the spreading of the nonmanual expressions is determined by c-command or Spec-head relations, thus functional categories (cf. Wilbur & Patschke 1999; Neidle et al. 2000, etc.). On the other hand, researchers have argued for a prosodic analysis of nonmanuals (cf. Sandler 1999, 2005, etc.). The features are said to spread along prosodic constituents following the same prosodic hierarchy\textsuperscript{23} as found for spoken languages (e.g. Nespor & Vogel 1986; Selkirk 1986).

The focus is mainly on intonational phrases (IP), which structure the speech in intonational units separated by intonational breaks. These intonational phrases are further divided into smaller units called phonological phrases (PP) and phonological words (PW), where words and constituents are grouped together by assimilation processes, breaks, and small changes in prosody. As prosody is built onto syntactic structure, the domains are often very similar. For both spoken and signed languages, however, syntactic and prosodic domains are not always isomorphic. See chapter 6, section 6.4.3 for examples of the non-isomorphism between syntactic and prosodic constituency in sign languages.

Further examples showing the structuring of signed utterances according to prosody can be seen with eye blinks that are often used as prosodic markers. Eye blinks sometimes occur within syntactic domains such as DPs and compounds, so they prosodically structure signed discourse independent of syntax (see Sze 2008 for Hong Kong Sign Language (HKSL) and Herrmann 2010 for DGS). The examples show that the assumption of a prosodic level is justified and even though I am not going to claim that all nonmanual features are prosodic, we can definitely conclude that some facial expressions spread along prosodic constituents rather than syntactic ones.

Facial expressions analyzed as having independent meanings that can align with different sentence types and prosodic constituents in a compositional manner support this statement.\textsuperscript{24} These facial expressions can take different parts of the utterance as their constituents, depending on the prosodic structure. Syntactic nonmanual features, on the other hand, are obligatorily linked with the corresponding syntactic construction and exhibit strict rules for scope and spreading options. The spreading is obligatory, otherwise the
sentence would be ungrammatical. Whether nonmanuals should be analyzed either syntactically or on prosodic grounds - or whether the two approaches may both hold for different nonmanuals - is yet to be seen. As mentioned above, I will come back to this issue in chapter 6, when I discuss the distribution of nonmanuals for modal meaning. An excursus into tone languages and what they may have in common with sign languages is given in the following section.

3.5. Tones in sign languages

As seen above, nonmanuals have an essential effect on different levels of grammar. Although they inherently belong to certain lexical signs, they are usually not seen as a distinctive phonological component of the sign. Traditionally, handshape, hand orientation, location, and movement are the four phonological feature classes that constitute a sign. Such minimal pairs can be found in every sign language. Figure 2 in chapter 2 displays a minimal pair in DGS. However, recent studies have brought to light that in some cases, nonmanuals do indeed distinguish between otherwise identical signs.

Figure 13. Facial expressions as the distinctive feature of two signs in LSC

Pfau & Quer (2010) give an example from LSC, where the signs for pity and fall-in-love only seem to be distinguished by facial expressions (see figure 13, pictures taken from Pfau & Quer (2010: 383) with the friendly permission from Cambridge University Press). Figure 14 shows a possible candidate for such a case in DGS. The signs ANDERS (different) and KOMISCH (strange) are only distinguished by a mouth gesture that can be abbreviated as ‘pf’ and slightly furrowed eyebrows. In DGS, we find some more of these pairs whose members only differ in their nonmanual expressions. SKEPTICAL is manually identical to the sign for MAYBE and only facial expressions
and body posture seem to mark the difference. STAY and IGNORE and some others are further candidates that might fit the requirements of tonal distinctiveness (see Herrmann & Köhler 2009 for a discussion on tones in African languages and different sign languages).

![ANDERS (different)](image1)

![KOMISCH (strange)](image2)

**Figure 14.** Facial expressions as the distinctive feature of two signs in DGS

Wilbur & Patschke (1998: 283-284) remark that a forward or backward body lean may distinguish between manually similar signs like ONLY and ALWAYS in ASL. It is doubtful that this is a true minimal pair as the radius and the movement patterns are slightly different. Nevertheless, the body lean seems to be a differentiating element of some kind. In ISL, the signs DANGEROUS and AWESOME are said to constitute a true minimal pair distinguished by facial expressions (Sandler & Meir 2008: 30,172). In ISL, the signs FALSE and DISBELIEF are distinguished by facial expressions alone. A cautious smile with closed lips and squinted eyes mark the sign for disbelief or being-unsure, whereas a more neutral expression parallel to the same manual sign means false in ISL.

Even though the productivity of distinctive nonmanuals is not yet investigated, we find more examples of this sort in different sign languages. It has to be discussed further whether these cases are true minimal pairs, but if they are, the question arises how these examples can be accounted for? A typolog-
ical perspective might show us an answer to this question. Sign languages have much in common with African and Asian languages. Sign language properties like classifying verbal systems, many fusional morphological processes, postnominal adjectives and postpositions, and reduplication for plural marking, for instance, are quite frequent in African, Asian, and indigenous North American spoken languages. A specific characteristic of many Asian and African languages investigated so far is that they make use of tones to differentiate meaning. Due to this tonal behavior, these languages are called ‘tone languages’. Tone is a relative value and a lexically distinctive phonological feature that is realized by variations of the fundamental frequency (f0) and perceived as distinct grades of pitch (cf. Pike 1948; Reetz & Jongman 2009; Gussenhoven 2004). Apart from lexically distinctive tones in general, tone differences may also morphologically distinguish verb-noun pairs, for example. Tonal variations may also operate on a sentential level indicating that the sentence is interpreted as an interrogative or that it is negated. Pfau (2008) notes that the nonmanual part of the sentential split negation in DGS behaves similar to tonal prosodies of tone languages. Since the nonmanual head shake is obligatorily bound to a predicative manual base, but may also spread along the VP, it is analyzed as an autosegmental prosodic feature affixed to the predicate. Languages like Gã and Ogbru negate sentences exclusively by prosodic changes and seem to be typologically quite similar to DGS in this respect.

If tones are defined as phonological features that are lexically and grammatically distinctive, one might call the above discussed nonmanuals in sign languages ‘nonmanual tones’. Thus, distinctive tones seem to be a modality-independent phenomenon not only for spoken languages, but also for sign languages. The recent linguistic debate discusses examples of ‘tones’ in both
modalities, their characteristics, phonological status, and potential productivity. Whether the presented nonmanuals are productive and thus true equivalents of tones and whether sign languages might therefore be categorized as ‘tone languages’ or not, merits further investigation. We should probably never refer to them as ‘tone languages’, but more comparative studies and systematic analyses of the individual minimal pairs are needed to explain these instances. Typological perspectives often offer interesting insights into the structure of the languages that are investigated.

### 3.6. Nonmanuals and their relation to particles

When asking informants for equivalent signs of specific words, they often answer something like: ‘This word does not exist in sign language. We say it differently.’ In general, sign languages are able to express thoughts and utterances (words, sentences, discourse) in an equivalent way to all natural languages. As intuitions about language use are unconscious and intuitive, it is important to empirically test and elicit words, signs, and expressions and then discuss the results afterwards. The same applies for both types of particles that were investigated in this study. Focus particles were expected to be realized manually. They exhibit a semantically defined meaning and can be found in a vast majority, if not all of the spoken languages worldwide. Modal particles, however, are found in only few spoken languages. They are a colloquial phenomenon expressing meaning nuances whose status is hard to define. Operating on a semantic-pragmatic level to modify the sentence, words such as *maar* or *well* in Dutch and *ja, doch* or *halt* in German are expected not to have manual equivalents in sign languages. Instead, different nonmanuals, manual modification, and specific expressions are the expected articulatory means for the realization of modal particles.

Language is mostly used unconsciously and native speakers as well as native signers cannot always explain it sufficiently. This holds especially when they are asked about words and particles from their second language in a different modality. Even though the participants of the studies were quite elaborate in their written language skills and used focus and modal particles in their written communication, it is not fruitful to discuss translations alone. Nonmanuals in particular are less naturally performed when brought to consciousness. Thus, the elicitation tasks and interviews are also based on experimental tasks such as a context creation task, a picture elicitation task,
and a picture story task. The general procedure of the data elicitation is displayed in the methodology chapter 4 and the individual tasks are described in chapters 6 and 8 respectively.

This book investigates the realization and the use of particles in sign languages. Concerning nonmanuals, two questions are discussed: What kind of information is transmitted via the nonmanual channels? and Why is it expressed that way? The following section briefly summarizes the forms and functions of nonmanuals in sign languages that have been discussed in this chapter.

3.7. Summary

Nonmanuals such as upper body, head, and face have been shown to be relevant for sign language grammar. Most sign languages do not use the lower part of the body in signing, so that upper torso, head, and face are the nonmanual body parts that may play a linguistic role. Sign languages sometimes draw upon one and the same nonmanual element and use it both for affective and linguistic purposes. Clear criteria such as scope, timing, systematic use, and neurological representation may distinguish these two uses and categorize them into para-linguistic and grammatical. Most importantly, this section has listed a variety of grammatical functions of nonmanuals in DGS, NGT, and ISL. Operating on all levels of grammar, nonmanuals may have lexical, morphological, syntactic, and semantic-pragmatic functions. Whether they are analyzed as equivalents to tones, syntactic features, prosodic cues, or intonational means depends on the functions they convey and the framework that is pursued. For focus particles and modal particles, the following hypotheses have been stated: (1) the three sign languages investigated exhibit focus particles and express them through the use of manual signs. (2) DGS, NGT, and ISL do not have manual equivalents of modal particles and they mainly realize them by means of nonmanuals. In addition, some manual modification and intensification is expected and sign languages might have language-specific expressions available. Therefore, this research primarily considers if and in which way nonmanuals contribute to the meaning of utterances in sign languages, comparing it to the meaning that is conveyed by particles in spoken languages.