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Information Structure in Sign Languages

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Abstract and Keywords

This chapter demonstrates that the Information Structure notions Topic and Focus are relevant for sign languages, just as they are for spoken languages. Data from various sign languages reveal that, across sign languages, Information Structure is encoded by syntactic and prosodic strategies, often in combination. As for topics, we address the familiar semantic (e.g. aboutness vs. scene-setting topic) and syntactic (e.g. moved vs. base-generated topic) classifications in turn and we also discuss the possibility of topic stacking. As for focus, we show how information, contrastive, and emphatic focus is linguistically encoded. For both topic and focus constructions, special attention is given to the role of non-manual markers, that is, specific eyebrow and head movements that signal the information structure status of constituents. Finally, aspects that appear to be unique to languages in the visual-gestural modality are highlighted.

Keywords: sign language, topic, focus, non-manuals, modality

40.1 Introduction

IN this chapter, basic Information Structure (IS) notions will be applied to sign languages (SLs), that is, languages in the visual-gestural modality of signal transmission (as opposed to the oral-auditory modality of spoken languages). It will be demonstrated that IS notions are relevant for SLs, just as they are for spoken languages—as is expected, of course, given that SLs are fully-fledged natural languages with complex structures on all levels of linguistic description (Sandler and Lillo-Martin 2006).

At first sight, it may appear a little awkward to discuss SLs as a group within a single chapter. After all, one would not devote a chapter to ‘spoken languages’, but rather to a

single language or a language family (as in Chapters 33–39). Comparative studies on SL structure have revealed that SLs differ from each other structurally and that, to a large extent, they differ along similar lines as spoken languages (Perniss et al. 2007; Pfau 2012). Still, in certain areas of grammar, SLs also show striking similarities, some of which are likely to be motivated by the visual-gestural modality (Meier 2002). As the following discussion will reveal, there are also interesting similarities in the realm of IS—and it may therefore not be so awkward after all to discuss SLs as a group in this chapter instead of focusing on a single SL.

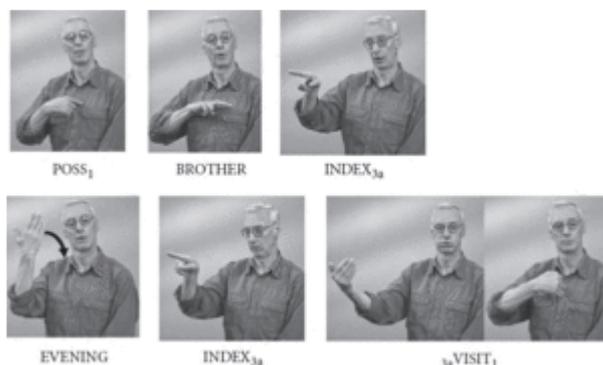
In Section 40.2, we will set the stage by providing some background information on SL structure and notation. Subsequently, the structure of the chapter reflects the well-known basic distinctions Topic–Comment (Section 40.3) and Focus–Background (Section 40.4). We will show that, across SLs, IS is encoded by syntactic and prosodic strategies, sometimes in combination, while morphological markers, the third strategy commonly found in spoken languages, are not attested. In Section 40.5, we conclude (p. 815) by briefly addressing modality effects: features in the expression of IS that are unique to SLs, such as the use of space and body leans. Throughout the chapter, we take a comparative perspective; that is, an effort will be made to provide and compare data from different SLs.

40.2 Background on sign language structure

Space does not allow us to provide a detailed overview of aspects of SL structure. Therefore, we will focus on two aspects that will turn out to be relevant to the discussion of IS in Sections 40.3 and 40.4: the grammatical use of the signing space and of non-manual markers.

In most SLs investigated to date, the signing space in front of the signer’s body can be employed for referential purposes. This space can be used, for instance, to localize non-present referents. In the SL of the Netherlands (*Nederlandse Gebarentaal*, NGT) example in (1a), the signer talks about his brother, who is not present in the discourse setting. The lexical sign *BROTHER* is followed by an indexical (pointing) sign towards location 3a (forward right) in the signing space, thereby localizing the referent at this arbitrary location. Subsequently, the same location can be used for pronominalization, that is, the second instance of *INDEX_{3a}* in (1a) is interpreted as ‘he’. Interestingly, some verbs, the so-called ‘agreeing’ or ‘directional’ verbs, can be modulated such that they target loci in signing space—be it the locus of a present referent or a locus established by means of *INDEX*. In (1a), the verb *VISIT*, which in its citation form moves forward from in front of the

signer's body, is directed from location 3a towards the signer, thereby agreeing with the subject and object ('he visits me'; see Lillo-Martin and Meier (2011) for a recent discussion of this phenomenon). The example is visualized by the video stills in Figure 40.1 (for VISIT, the beginning and end locations of the movement are shown).¹ (p. 816)



Click to view larger

Figure 40.1 Video stills illustrating example (1a).

© Nederlands Gebarent centrum (Dutch Sign Centre; NGC 2002); stills used by permission.

(1)

- _____ br/top
- a. POSS₁ BROTHER INDEX_{3a}, EVENING INDEX_{3a} 3a VISIT₁

‘As for my brother, he will visit me tonight.’

- _____ wh
- b. JOHN BUY WHAT YESTERDAY

‘What did John buy yesterday?’

Example (1a) also illustrates the use of a non-manual marker, namely a brow raise accompanying a topic NP. The topic constituent is followed by a prosodic break (indicated by the comma and realized as a pause and a change in non-manual activity). Actually, across SLs, non-manual markers—that is, mouth configurations, head and body movements, and facial expressions—may fulfil functions at all levels of grammar (see Pfau and Quer (2010) for an overview). Here, we only provide one more example of a syntactic marker. Across SLs, wh-questions are commonly marked by furrowed brows, as illustrated by the American SL (ASL) example in (1b) (Petronio and Lillo-Martin 1997: 26). While both markers in (1) can be argued to fulfil a syntactic function, it has also been claimed that at least some non-manuals are prosodic in nature and can thus be compared

to intonational contours in spoken languages (Sandler 2011). Under this assumption, the wh-marker in (1b) could be considered the prosodic reflex of a [+wh]-feature.

40.3 Topic-comment distinction

Traditionally, topic constructions have received more attention in the SL literature than focus constructions. On the one hand, topics (especially their frequent use in (p. 817) ASL) have been subject to investigation since the early days of sign language research (Friedman 1976; Ingram 1978); on the other hand, they have been studied for various unrelated SLs, such as ASL (Aarons 1994; Todd 2008), Finnish SL (FinSL: Jantunen 2007), Hong Kong SL (HKSL: Sze 2008b, 2011), Israeli SL (ISL: Rosenstein 2001), NGT (Coerts 1992; Crasborn et al. 2009), and Russian SL (RSL: Kimmelman 2015). The data reveal that across SLs, topic (backgrounded) information tends to occupy a left-peripheral position in the clause; also, it is often accompanied by a non-manual marker (e.g. raised eyebrows) and followed by a prosodic break. It has thus been argued that topichood in SLs is commonly syntactically and prosodically marked. In addition, some SLs have even been claimed to be topic-prominent, for instance, ASL (McIntire 1982), British SL (Deuchar 1983), and ISL (Rosenstein 2001).²

In this section, we will address a number of complexities concerning the use and interpretation of topics. First, in Section 40.3.1, we will present and discuss different types of topics, focusing on semantic and syntactic distinctions that are well-known from the study of spoken languages (see Buring, this volume). We then turn to the issue of non-manual marking, and the occasional absence thereof, in Section 40.3.2. Finally, in Section 40.3.3, we investigate possible combinations of topics, that is, topic stacking.

40.3.1 Types of topics

40.3.1.1 Semantic distinctions

Topic constituents can be linked to the preceding discourse in various ways and may include different types of information. Here we adopt the basic semantic distinction between 'aboutness' and 'scene-setting' topics (Jacobs 2001), which is, amongst others, applied by Sze (2008b, 2011) in her study on HKSL. Although not everyone would agree that both aboutness and scene-setting topics belong to one general category of topics, the data discussed below (from HKSL and RSL) suggest that this a reasonable analysis for SLs, as both types of topics are similarly marked.

It is generally assumed that an aboutness topic represents what the sentence is about. It includes information which is either familiar to the interlocutors or identifiable from the preceding context. Based on these characteristics, Sze (2011: 137) identifies the fronted object in (2a) as the topic of the sentence; this NP is followed by a prosodic break but it is not non-manually marked (see Section 40.3.2 for further discussion). The NGT example in (2b) contains a topicalized subject, which is non-manually marked and the articulation of which is prolonged by means of a final hold (as indicated by the horizontal line) (Coerts 1992: 223). For both examples, we must assume that the topicalized NP has been mentioned in the preceding discourse.

(p. 818) (2)

a. INTERPRETER[^]SIGN-LANGUAGE, GOVERNMENT PAY-THEM NOT-HAVE

‘The sign language interpreters, the government does not pay (them).’

b. AIRPLANE^{top}——| COME NOT^{neg}

‘As for the airplane, it did not arrive.’

In contrast to aboutness topics, scene-setting topics provide a spatial or temporal context within which the main predication holds (Chafe 1976). They may thus involve either locative expressions or temporal information (be it expressed by adverbials, NPs, or subordinate clauses). While aboutness topics usually include discourse-old information, scene-setting topics may include both discourse-new or -old information. Two examples from FinSL, in which a locative expression (3a) and a temporal adverbial (3b), respectively, occupy the topic position, are provided in (3); both topics are marked non-manually (Jantunen 2007; ‘ew’ = eyes wide).

(3)

a. ew & br
 NIGHT CLUB INDEX_a, INDEX₁ WORK DOORMAN [Fin
 ‘That night club, I work (there) as a doorman.’

b. ew & br
 NOW EVENING, INDEX₁ GO PUB [Fin
 ‘This evening, I (will) go to the pub.’

At the same time, the examples in (2) and (3) also illustrate an important distinction related to the thematic roles assigned by the verb. Simplifying somewhat, aboutness topics are generally arguments of the verb (object in (2a), subject in (2b)), while scene-setting topics are adjuncts (see also Crasborn et al. (2009) for the distinction of ‘argument’ and ‘spatio-temporal’ topics). Sze (2011), however, points out that, occasionally, adverbials may also represent what the sentence is about.

A third semantic type mentioned in the literature is contrastive topics (see Büring, this volume). Just like aboutness topics, contrastive topics refer to previously mentioned information and are arguments of the verb; unlike aboutness topics, however, they create a contrast between the topic constituent and a previously mentioned constituent (see example (5) below for further discussion).

40.3.1.2 Syntactic distinctions

Besides semantic characteristics, topics are also commonly distinguished based on their syntactic properties or, to be more precise, the extent to which they are (p. 819) syntactically integrated into the rest of the sentence. The crucial distinction, which has first been explicitly discussed for SLs by Aarons (1994), is that between ‘base-generated’ and ‘moved (fronted)’ topics. According to Aarons, the topic VEGETABLE in the ASL example (4a) must be base-generated in topic position, as it does not constitute an argument of the verb. Commonly, in these cases, an argument of the main clause bears a semantic relationship to the topic—in (4a), a relation of class membership (Aarons 1994: 152). Note that the example also illustrates that topics need not be specific and definite.

(4)

_____ top
 a. VEGETABLE, JOHN LIKE CORN

‘As for vegetables, John likes corn.’

_____ top
 b. MARY_i, JOHN LIKE INDEX_i

‘As for Mary, John likes her.’

Aarons also assumes that structures like (4b) involve a base-generated topic. While MARY—just like VEGETABLE in (4a)—is not an argument of the verb, it is co-referential with the pronominal INDEX in object position (cf. the NGT example (1a), which illustrates the same phenomenon for a subject). Constructions in which a topic NP is co-referential with a (resumptive) pronoun within the clause are often referred to as ‘left dislocation’ (López, this volume).

The example in (5) displays different properties, as the clause following the topic NP would be ungrammatical by itself (Aarons 1994: 154; also see example (2b) above). According to Aarons, we therefore have to assume that the object NP MARY moved to the topic position (SpecTopP) leaving behind a trace (‘t’) in its D-structure position.³ Structures which involve movement of a noun phrase to the left periphery of the sentence are labelled ‘topicalization’.

(5)

_____ top
 MARY_i, JOHN LOVE t_i

‘Mary, John loves.’

(p. 820) Interestingly, Aarons points out that topicalization either selects one specific member from a set or is used for contrastive focus. Therefore, what we are dealing with is actually focus (see the discussion of (18) in Section 40.4.1.2; also see Neidle (2002), who assumes that MARY in (5) actually occupies the specifier of a Focus Phrase). Wilbur (1997), however, argues that (5) might well be uttered in a context like the following: There are three girls in John’s class, Jane, Mary, and Sasha—Jane, he hates, but Mary, he likes. In this context, MARY would indeed be a contrastive topic. The different possible

functions of fronted constituents are attested in other languages as well, including English (Prince 1986).

A third type that is often distinguished in the literature are ‘hanging’ topics (sometimes also referred to as ‘Chinese-style’ topics; e.g. Todd 2008; Sze 2011). In contrast to left dislocation, a hanging topic is not co-referential with an argument of the clause following it; in contrast to topicalization, the topic NP is not an argument of the verb. Sze (2011: 137) categorizes the topic constituent in (6) as a ‘hanging “aboutness” topic’.

(6)

[IX_{deaf-allowance} DEAF DEAF-ALLOWANCE IX_{deaf-allowance}]
 MONEY (hesitation) MONEY EVERY-MONTH HAVE

‘About the deaf allowance, (I) get the money every month.’

As for the syntax of topic constructions, Crasborn et al. (2009) observe that in NGT, a clause-final indexical sign may optionally be used, which is co-referential with the topic constituent. Crucially, this sign is different from the (resumptive) pronouns attested in examples like (1a) and (4b) above, as it does not occupy the position of the respective argument (NGT is an SOV language). The example in (7a) actually contains three pointing signs targeting the same position: the first one localizing the topic NP GIRL, the second one being a resumptive pronoun in subject position (indicative of left dislocation), and the third one appearing in clause-final position (Crasborn et al. 2009: 359). In previous studies on ASL (Padden 1988) and NGT (Bos 1995), it has been argued that such clause-final pronominal signs always refer to the subject (hence the name ‘subject pronoun copy’). Crasborn et al., however, provide examples in which the final INDEX refers to an object (7b) or a locative expression. They argue that the final INDEX actually refers to the topic and therefore label the phenomenon as ‘topic agreement’.

(7)

a. GIRL INDEX_{left}, INDEX_{left} BOOK THROW-AWAY INDEX_{left}

‘That girl, she threw away the book.’

b. BOOK INDEX_{right}, INDEX_{left} THROW-AWAY INDEX_{right}

‘He threw away the book.’

(p. 821) **40.3.2 Non-manual marking**

Ever since the early studies on IS in SLs, it has been observed that topicalized constituents are commonly accompanied by specific non-manual markers. A marker that is mentioned in basically every study addressing this issue is brow raise; in addition, head movements are often described. Ingram (1978: 204), for instance, observes that ‘ASL topics may be marked with the raising of the eyebrows, the tilting of the head, the twitching of a shoulder’ and goes on by pointing out that it is ‘not yet known whether the choice of topic marker is determined by individual preference..., by sociolinguistic influences, by grammatical context, or by a combination of these’. Similarly, Liddell (1980) mentions brow raise and a slight backward head tilt for ASL, while Coerts (1992) concludes that ‘eyebrows up’ is the only non-manual feature characteristic of topics in NGT, as it is the only feature in her data that accompanied more than 50 per cent of all topics (in fact, this feature accompanied 90.6 per cent of all topics).⁴ Other markers that one may come across in the literature include ‘eye gaze at addressee’ and ‘head nod’ (see Sze (2011: 126f) for a convenient overview of non-manual markers as identified in different studies).

In other words: the abbreviation ‘top’ as used in some of the above examples is often a cover term for a set of non-manual markers. Aarons (1994) was the first one who attempted to establish a correlation between topic type and non-manual marking. She distinguishes three subtly different non-manual markers, glossed as ‘tm1’, ‘tm2’, and ‘tm3’, which systematically accompany different types of topics in ASL. Here we only consider the former two, the form of which Aarons (1994: 156) describes as follows:

tm1 —raised brows; head tilted slightly back and to the side; eyes widened; head moves down and forward → moved topics

tm2 —large movement of head back and to the side; eyes very wide; head moves down and forward → base-generated topics

She observes that ‘tm1’ accompanies moved topics like the one in (5) while ‘tm2’ occurs with base-generated topics of the type illustrated in (4). Note that it may well be the case that these (and other) markers are compositional in the sense that different components (e.g. brow position, head position) contribute distinct meanings.

All of the non-manual markers discussed so far are domain markers in that they extend over a syntactic/prosodic domain. In addition, there are boundary markers. Left-peripheral topics generally constitute an intonational phrase which is followed by

(p. 822) a prosodic break and which may also be manually marked by a phrase-final hold

(as in (2b)). A non-manual marker which is frequently observed in this context is an eye blink ('bl') coinciding with the final hold or following the topic constituent, thus marking the prosodic boundary (Sze 2008a; Herrmann 2010), as illustrated in the German SL (*Deutsche Gebärdensprache*, DGS) example in (8) (Herrmann 2010: 23).⁵

(8)

bl

YOUR DOG, NAME WHAT

'Your dog, what was his name again?'

All of Aarons' examples include a non-manual (domain) marker accompanying all types of topics (moved and base-generated, arguments and adjuncts). Similarly, Jantunen (2007: 165) points out that in his data, topics 'were always layered with some sort of a position of the eyes and eyebrows'. Later research on other sign languages, however, suggests that SLs may differ from each other when it comes to non-manual marking. Rosenstein (2001), for instance, claims that topics in ISL are not marked by brow raise—at least not in spontaneous discourse. Sze (2008b, 2011) observes that in HKSL, only a very small number of aboutness topics—including hanging topics, left-dislocated topics, and topical (clause-internal) subjects—are accompanied by brow raise and/or a specific head position (see e.g. (2a) above). Also, they are not consistently followed by an intonational break. In contrast, scene-setting topics in her data (with the exception of temporal adverbials) are much more likely to be accompanied by either brow raise, a forward head tilt, or both. In (9), the NP SECONDARY-TWO, which sets up a temporal domain, is marked by brow raise and forward head tilt ('fht') (Sze 2011: 14).

(9)

br & fht

SECONDARY-TWO, START PLAY-BASKETBALL, HAVE-COMPETITION
FARE-BETTER-THAN

'At secondary two (= grade 8), I started playing basketball and had competitions; I was better than (other senior schoolmates).'

In contrast to HKSL, in NGT and RSL both aboutness topics (10a) and scene-setting topics (10b) can be marked by eyebrow raise (Kimmelman 2015). However, neither of the two types of topics is obligatorily marked; in fact, the majority of topics remain unmarked. Furthermore, with respect to aboutness topics, the NGT and RSL data

(p. 823) reveal another contributing factor: only shifted aboutness topics in these two SLs can be marked by eyebrow raise.

(10)

_____ br
 a. IX CAT IX, THINK

‘The cat thinks.’

_____ br
 b. IX WALL, RAIN PIPE

‘There is a rain pipe on the wall.’

Taken together, the data from different SLs reveal (i) that topics are commonly, but not consistently, marked by non-manual domain and boundary markers, (ii) that different types of topics may be accompanied by subtly different domain markers, and (iii) that SLs may differ with respect to the form and frequency of the markers employed.

40.3.3 Topic stacking

In his study on ASL topics, Ingram (1978) points out that topic NPs may combine with temporal and/or locative phrases to form what he calls the ‘theme’ of the sentence. Put differently, he may have been the first one to observe that argument and adjunct topics may be stacked, as shown in (11) (adapted from Ingram 1978: 204).⁶

(11)

_____ top
 LONG-TIME-AGO, GIRL SMALL, DECIDE WALK IN WOODS

‘A long time ago a little girl decided to walk in the woods.’

Aarons (1994) further investigated the possibilities of topic stacking in ASL. She finds that there is a maximum of two topics adjoined to the sentence (CP) and also describes some interesting combinatorial constraints. First, she observes that two base-generated topics of the types presented in (4) may be combined, as illustrated in (12) (Aarons 1994: 176). However, while in (12a), the order of the two topics, neither of which is co-referential with an argument of the verb, is free, in (12b), reversal of the two topics would lead to ungrammaticality; that is, a topic which is co-referential with an argument

of the clause (JOHN) must precede a topic which is in a class-member relationship with an argument of the clause (VEGETABLE).

(p. 824) (12)

a. tm2 tm2
 VEGETABLE, CHINA IX, PEOPLE PREFER BROCCOLI

‘As for vegetables, in China, people prefer broccoli.’

b. tm2 tm2
 JOHN_i, VEGETABLE, IX_i PREFER ARTICHOKE

‘As for John, as far as vegetables are concerned, he prefers artichokes.’

Second, grammaticality judgements by native signers indicate that two moved topics can never co-occur, irrespective of order, as shown by the ungrammaticality of (13a) (Aarons 1994: 179). Third, when it comes to the combination of a base-generated and a moved topic, only the sequence of base-generated topic followed by moved topic appears to be marginally acceptable (13b), while the reverse order is judged ungrammatical (Aarons 1994: 177).

(13)

a. * tm1 tm1
 JOHN_i, MARY_j, t_i LOVE t_j

‘John, Mary, he loves her.’

b. ? tm2 tm1
 JOHN_i, MARY_j, IX_i LOVE t_j

‘As for John, Mary he loves.’

Crasborn et al. (2009) discuss topic stacking from a different perspective, focusing not on the co-occurrence of moved and base-generated topics but rather on the combination of argument and spatio-temporal (scene-setting) topics. They observe that in NGT, argument topics precede spatio-temporal topics and within the latter group, time specifications typically precede place specifications, as illustrated in (14) (Crasborn et al. 2009: 359). In Aarons’ system, the topic constituent [IX_t PERSON] would be classified as a base-generated topic, as it is resumed by a pronoun in the clause. Note that the left-

dislocated topic is not non-manually marked ('neutral' expression) while the scene-setting topics are marked by head tilt—which is in line with the observation made by Sze (2011) for HKSL. Crasborn et al. also claim that an argument topic always constitutes a prosodic unit of its own (an intonational phrase) while spatial and temporal topics may be merged into a single prosodic unit, as is the case in (14).

- (14)
- | | | | |
|--------------------------|-------------------|---------------------------------|------------------|
| <u>neutral</u> | <u>tilted</u> | <u>nod</u> | <u>neutral</u> |
| IX _{rt} PERSON, | TOMORROW AT-HOME, | IX _{rt} NEWSPAPER READ | IX _{rt} |

'The man, tomorrow at home he will read the newspaper.'

(p. 825) Clearly, in a phrase structure model like that of Rizzi (1997), which assumes multiple topic positions within the left periphery, topic stacking can be accounted for (see Aboh, this volume). Lillo-Martin and de Quadros (2008), however, further assume that the higher topic position (which they label 'Topic-Comment Phrase') hosts base-generated topics while the lower one hosts moved topics—with a Focus Phrase sandwiched between the two topic positions, as illustrated in (15a) (also see (16b) below).

- (15)
- a. [_{T-CP} TOPIC [_{FocP} FOCUS [_{TopP} TOPIC [_{IP}]]]]
- | | | |
|----------------------|--|------------------|
| base-gen.
(‘tm2’) | | moved
(‘tm1’) |
|----------------------|--|------------------|
- b. [_{FamP} TOPIC [_{ShiftP} TOPIC [_{ContrP} TOPIC [_{IP}]]]]
- | | | |
|----------------------|----------------------|------------------|
| base-gen.
(‘tm3’) | base-gen.
(‘tm2’) | moved
(‘tm1’) |
|----------------------|----------------------|------------------|

Similarly, Puglielli and Frascarelli (2007) claim—based on spoken and sign language data—that aboutness topics occupy a topic projection in the left periphery ('ShiftP') above contrastive (i.e. moved) topics (15b). They further assume a third topic position for familiar topics, which they situate highest in the tree (note that these are the topics, which, according to Aarons (1994), are marked by 'tm3', and which we excluded from the discussion in Section 40.3.2). While this order of dedicated positions allows for the derivation of the (marginally acceptable) ASL example (13b), it seems that one further has to assume that the projection for aboutness topics ('T-C P' or 'ShiftP') is recursive in order to account for the examples in (12).⁷

40.4 Focus-background distinction

Although the focus-background distinction in SLs has been explored in less detail than topics, the expression of focus has been relatively well studied for ASL (Wilbur 1994, 1996; Neidle 2002), and some data is available for other sign languages, including Brazilian SL (*Língua de Sinais Brasileira*, LSB: Nunes and de Quadros 2008), NGT (Van der Kooij et al. 2006), and DGS (Herrmann 2013); for an overview, see also Wilbur (2012). Based on the available data from these languages, we first address (p. 826) types of focus in Section 40.4.1; this will be followed by a discussion of non-manual marking of focus in Section 40.4.2, while the association with focus will be reviewed in Section 40.4.3.

40.4.1 Types of focus

It has been shown that different types of focus, including information focus, contrastive focus, and emphatic focus, each have a different means of expression across SLs (Wilbur 2012). Crucially, just like topics, all three types of focus can be expressed both syntactically and non-manually (see Section 40.4.2 below). Before addressing the three types of focus, we should briefly address the relation between focus and stress in SLs. As in many spoken languages, the focused constituent in SLs generally has to be stressed (Wilbur 1994, 1999). Despite a disagreement among researchers as to how exactly stress is realized in different SLs, the most common features of a stressed sign are longer duration, larger movement trajectory, and higher velocity of the movement (Wilbur 1999; Van der Kooij et al. 2006; Crasborn and Van der Kooij 2013). As Crasborn and Van der Kooij (2013) point out, there is no research on potential analogues of focus projection in sign languages (see Arregi, this volume).

40.4.1.1 Information focus

As for the first type of focus under consideration, information focus is often not marked syntactically (Lillo-Martin and de Quadros 2008), which means that the constituent expressing information focus remains *in situ*, as in (16a), which could be an answer to the question ‘What did you read?’. However, in ASL, the focused constituent can optionally be moved to a clause-initial position—SpecFocP in Neidle (2002) and Lillo-Martin and de Quadros (2008). The example in (16b) illustrates the co-occurrence of a left-peripheral information focus (BANANA) with a base-generated topic (FRUIT). As pointed out by Lillo-

Martin and de Quadros (2008: 169), this sentence could be uttered as a reply to the question ‘As for fruit, what does John like?’ (‘t-c’ = topic-comment topic; see (15a)).

(16)

a. I READ BOOK STOKOE

‘I read Stokoe’s book.’

t-c I-focus

b. FRUIT, BANANA, JOHN LIKE MORE

‘As for fruit, John likes *bananas* best.’

It should be noted that a different analysis of the ASL data has been proposed by Petronio (1991) and Wilbur (1997), who claim that stress in ASL—unlike in English—has a fixed position: the right edge of the clause. As a consequence, the constituent in focus must (p. 827) either undergo rightward movement or be doubled, that is, appear once in its original position and once in the clause-final one (see Section 40.4.1.3 for discussion).⁸

Should the focus be expressed syntactically, one of the main means to do so in SLs is the so-called ‘wh-cleft construction’, which has been described for many SLs, including Australian SL (Johnston and Schembri 2007), NGT, and RSL. Wilbur (1996) argues that ASL constructions like (17a) should be analysed as wh-clefts, where the first clause expresses the topic and the second clause expresses the focus of the sentence (Wilbur 1996: 210).⁹ She provides several syntactic arguments—for instance, embedding, interaction with negation, and ellipsis—for the claim that these constructions are single sentences, and not a combination of a rhetorical question and an answer, as had previously been argued by Baker-Shenk (1983). In particular, she argues that the first part of the construction is a reduced relative clause, while the second part is a constituent smaller than a clause, which conveys new information.

(17)

_____ br
 a. ME DISLIKE WHAT, LEE POSS TIE

‘What I dislike is Lee’s tie.’

_____ br
 b. JOHN HAVE MOTORCYCLE, NO (HE NOT HAVE MOTORCYCLE)

‘John doesn’t have a motorcycle.’

Recently, however, Caponigro and Davidson (2011) have claimed that these constructions are not syntactically and semantically parallel to *wh*-clefts in spoken languages, but have instead analysed them as clausal question-answer pairs unique to SLs. According to them, the function of these constructions is indeed connected to Information Structure, but cannot be subsumed under the traditional functions of *wh*-clefts. While they agree with Wilbur in treating the whole construction as a single declarative sentence, they provide arguments against her analysis of the two parts of the construction. As for the first (question) part, they argue that it is an embedded interrogative and not a relative clause, as ASL relative clauses never contain *wh*-words. In addition, they show that the question part can also be a polar question. As for the second (answer) part, they provide evidence that it actually is a partially elided declarative clause. For illustration, consider the example in (17b), which includes a polar question in the first part and the obligatory negative reply *NO* along with the optionally omitted material (*HE NOT HAVE MOTORCYCLE*) in the second part (Caponigro and Davidson 2011: 336).

(p. 828) **40.4.1.2 Contrastive focus**

With respect to the second type of focus, contrastive foci in SLs are also often marked by topicalization, as has already been mentioned in the context of example (5). Aarons (1994), for instance, has shown that in ASL, topicalization can be used to express contrast, as illustrated in (18) (Aarons 1994: 159; example slightly adapted).

(18)

_____ tm1
 JOHN_i NOT-LIKE JANE. MARY_j, INDEX_i LOVE t_j.
 ‘John doesn’t like Jane. *Mary* he loves.’

Lillo-Martin and de Quadros (2008) also claim that in ASL and LSB, the constituent which is in contrastive focus is moved to the focus projection in the left periphery of the

sentence. As pointed out previously, however, Wilbur (1997) has suggested that a left-peripheral contrastive constituent can either be a contrastive focus or a contrastive topic. This implies that topicalization as a syntactic mechanism is used to express a variety of meanings, and not just contrastive focus.

Interestingly, syntactic marking of contrast can also be achieved by certain modality-specific means, in particular, by making use of the signing space or the two manual articulators. As for the former, two referents that are contrasted can be localized in opposite locations in the signing space, and this strategy alone can yield a contrastive reading in SLs. Moreover, contrasted referents may trigger the use of a so-called ‘dominance reversal’ (Frishberg 1985).

Dominance reversal is a phenomenon connected to the fact that signers usually use one hand more actively than the other, so that one-handed signs, for instance, are signed with this dominant hand (‘dh’). However, sometimes the roles of the hands are switched with the non-dominant hand (‘ndh’) becoming more active. According to Frishberg, this strategy can be applied in order to separate a topic (signed with one hand) from the comment (signed with the other hand), as in the Jordanian SL (*Lughat il-Ishaara il-Urdunia*, LIU) example in (19a) (Hendriks 2007: 250), but it may also serve the purpose of contrasting referents, as in the NGT example in (19b) (adapted from Crasborn and Van der Kooij (2013)). The latter use implies that referents localized contrastively (to the right and to the left of the signer) can be signed with two different hands, leading to the dominance reversal.

(19)

- a. dh: MULTI-COLOURED-COAT
 ndh: BEAUTIFUL GOOD

‘The multi-coloured coat was beautiful and good.’

- b. dh: NO SON IX SELF IX
 ndh: NO WIFE

‘No, it’s not my wife, it’s my son (who went to the movies).’

(p. 829) In addition to syntactic marking, contrastive focus or, more generally, contrast is usually marked non-manually. The non-manual marking associated with it can be the same as the one that is associated with information focus (Lillo-Martin and de Quadros

2008), but contrastive focus appears to be marked more consistently (and other special means are also available, see Section 40.4.2).

40.4.1.3 Emphatic focus

Turning to the last type of focus, emphasis in SLs is usually connected to the phenomenon of doubling, which means that a constituent referring to the same object/activity appears twice within a single clause, as illustrated for the modal verb *CAN* in the LSB example in (20) (de Quadros 1999; cited in Nunes and de Quadros 2008: 178).

(20)

hn

I (CAN) GO PARTY CAN

‘I *can* go to the party.’

This phenomenon has been described for many SLs, including ASL, LSB, and HKSL (Sze 2008b). According to Nunes and de Quadros (2008), doubling in ASL and LSB is used to express emphasis, and it surfaces when two copies of a moved constituent are overtly realized. Alternative analyses of doubling have been proposed by Petronio (1991), who connects doubling to all types of focus, and by Fischer and Janis (1990), who argue that doubling is motivated by morphosyntactic factors. Recently, Kimmelman (2012) has proposed a unified account of doubling in RSL and NGT. Based on the observation that different types of constituents—from pronouns to full clauses—can be doubled, he claims that doubling in these two sign languages serves for foregrounding of both topical and focal information, both at the syntactic and discursive level.

Although prominent across SLs, doubling as a grammatical phenomenon is not unique to the visual-gestural modality. Kandybowicz (2007) has shown that it occurs in many spoken languages from different language families, and that it fulfils similar functions related to IS: emphasis, contrast, or polarity.

40.4.2 Non-manual marking

Similar to topics, foci in SLs can be marked non-manually. Interestingly, non-manual marking of foci is in many respects similar to non-manual marking of topics. For instance, according to Lillo-Martin and de Quadros (2008), different types of focus (information, contrastive, and emphatic) in ASL and LSB are consistently marked by eyebrow movement and a backward head tilt; judging by pictures provided in their article, contrastive focus is also marked by a forward head tilt. In other SLs, similar non-manual

markers have been observed. In DGS, for instance, replacing and corrective foci are marked by raised eyebrows and head tilts and movements, while information and (p. 830) selective foci are not consistently marked (Waleschkowski 2009). In addition, Crasborn and Van der Kooij (2013) claim that information and contrastive foci in NGT can be marked by a large number of non-manuals. In particular, all kinds of foci are characterized by eye contact between the signer and the addressee and mouth actions; in addition, focus can be marked by body lean, head tilt, head nod, and brow raise.

One can notice that non-manual markers that are used to mark focus (such as raised eyebrows) also commonly accompany topics. In addition, in some SLs both topics and foci can be fronted. These similarities could be taken to suggest that these markers actually mark something else; Wilbur and Patschke (1999), for instance, claim that raised eyebrows in ASL consistently mark A'-positions. On the other hand, there are also numerous differences in syntactic and non-manual marking of topics vs foci in different SLs (see also below). Further research on more SLs is required to disentangle how syntactic position and (possibly subtle) differences in non-manual marking correlate with the IS status of a constituent.

Until recently, it was largely unknown how exactly different non-manual markers interact with each other. Lately, however, the importance of this question has begun to be understood. For instance, Crasborn and Van der Kooij (2013) discuss the possibility that in NGT, raised eyebrows, open eyes, and backward head tilts are all realizations of an abstract phonological feature [open up!]. It would therefore be insightful to study the features that can have multiple phonetic realizations and find out their IS-related functions.

In addition to non-manual markers that are used to mark both topics and foci, there are non-manual markers associated specifically with focus and contrast, namely body leans and contrastive spatial localizations. Wilbur and Patschke (1998) have found that forward and backward body leans in ASL serve to mark inclusion vs exclusion in general, and, more specifically, that they may also mark stress, accompany the focus particles *EVEN* and *ONLY*, and signal focus and contrast. According to Van der Kooij et al. (2006), body leans fulfil similar functions in NGT: in particular, the focus particles *ONLY* and *ALSO* are accompanied by backward and forward leans, respectively. Unlike ASL, however, in NGT contrast is expressed by left- vs rightward body leans, as shown in (21), where two actions are contrasted (Van der Kooij et al. 2006: 1607, slightly adapted).

(21) lean leftward lean rightward
 headshake
 NO, INDEX RIDE-BIKE, INDEX ASL STUDY, INDEX
 ‘NO, he is not out biking, he is studying ASL.’

Non-manual contrast marking by sideward body leans is probably a manifestation of a more general strategy, namely localizing contrasted referents in opposite areas in the signing space, as discussed in Section 40.4.1.2. By leaning towards these contrastive locations, the signer further emphasizes the contrast. Actually, the same contrastive opposition is also manifest in dominance reversals.

(p. 831) The fact that three related strategies—body leans, contrastive localization, and dominance reversal—are used to express contrast in SLs may be an argument in favour of considering contrast a separate notion of IS, and not a subtype of focus (see Repp, this volume). However, Crasborn and Van der Kooij (2013) have suggested that in longer stretches of discourse, these strategies can be used to mark focus (without contrast) as well. Therefore, this question requires further research, in particular, the analysis of data from various SLs.

40.4.3 Focus particles

Focus-sensitive particles, such as *only* and *also* (Beck, this volume), also exist in SLs. These particles have, for instance, been claimed to exist in ASL (Wilbur 1994) and NGT (Van der Kooij et al. 2006). Herrmann (2013) investigates and compares the use of focus particles in NGT, DGS, and Irish SL, describing both similarities and differences between the three languages. Manually expressed particles are usually associated with non-manual marking. Focus particles are often accompanied by non-manuals connected to focus, such as eyebrow raise and head tilt, as well as by additional markers. For instance, the manual sign ONLY in ASL and NGT is often accompanied by a backward body lean, while the particle ALSO is usually accompanied by a forward body lean (Wilbur and Patschke 1998; Van der Kooij et al. 2006). Moreover, these non-manuals alone can express the relevant meaning, that is, the manual sign is optional, as is evident from example (22) (Van der Kooij et al. 2006: 1603).

(22)

forward

NEWSPAPER, BOOK INTERESTING

‘The newspaper, but also the book, is interesting.’

According to Herrmann (2013), particles expressing meanings similar to *only* and *also* are present in many SLs; however, a particle that is functionally equivalent to *even* has not yet been found in any SL. The emphatic meaning connected to this latter particle in spoken languages can only be expressed non-manually in SLs, or by a non-manual combined with a manual particle with a different function. For example, in DGS, the emphatic non-manual expression can be combined with the sign ALSO, yielding the emphatic meaning (23) (Herrmann 2013: 261, slightly adapted; PF stands for a particle, ‘g-pu’ for a palm-up gesture).

(23)

hn+br

_____ even

TIM IX₃ BOOK ALSO PF [READ]_F g-pu

‘Tim has *even* read the book.’

(p. 832) This fact is interesting from a typological perspective, as it provides evidence for the universality of the restrictive and additive particles, but not the emphatic ones. While the status of the non-manual marker that can serve to express emphatic meaning is not clear yet, its use in (23) suggests that the relevant meaning can be expressed compositionally.

40.5 Modality effects

While spoken languages exist in the oral-auditory modality, sign languages exist in the visual-gestural modality. Furthermore, SLs use several partially independent articulators to transfer information, namely the two hands, the torso, the head, the lips, and the eyebrows, among others. Therefore, it is always important to determine whether and, if so, how the modality influences the structure and functioning of a sign language. Separating modality-specific from modality-independent properties of languages is also crucial to the quest for linguistic universals and our understanding of the linguistic

capacity in general. For this reason, we will briefly summarize the possible modality effects identified in the domain of IS in SLs.

The first major modality effect that appears in connection to IS is the crucial role of non-manual marking. It has been claimed that non-manual marking in SLs is in many respects parallel to intonation (pitch movement) in spoken languages (Pfau and Quer 2010). However, despite the parallels, non-manual marking is formally much more elaborate than intonation due to the availability of multiple articulators. These different articulators are commonly used to express several separate bits of information simultaneously; for instance, eyebrows can mark information focus while a body lean may express contrast at the same time. In addition, several non-manual features can be a realization of a more abstract phonological feature (see Section 40.4.2 above). Furthermore, non-manuals interact with manual signs in a non-trivial way: they can double the meaning of the sign (as in the case of non-manual marking accompanying *ONLY* or *ALSO*); they can have a separate meaning (e.g. a sideways body lean that expresses contrast), or they can create a meaning in combination with the manual sign (as in the case of emphatic non-manual marking combined with the sign *ALSO* yielding the meaning 'even'). As a result, in SLs, the non-manual channel can be employed to express elaborate semantic distinctions in the domain of IS.

Another group of effects of modality on IS is connected to the presence of two hands as partially independent articulators, which in principle would allow for expressing two streams of information simultaneously. Due to processing difficulties, the hands are generally not used independently: it is almost impossible to produce or understand two separate utterances at the same time. However, the hands do not always act as one articulator either, and signers can exploit their partial independence to structure information. For instance, dominance reversal can be used to express contrast and also to separate the topic, signed with one hand, from the comment, signed with the other hand (Frishberg 1985). Moreover, the use of the non-dominant hand in general is probably (p. 833) connected to IS: it may convey less important or backgrounded information and maintain a continuous topic in discourse (Vermeerbergen et al. 2007). Although a few studies that consider this phenomenon are available, the role of the two hands in relation to IS awaits further research.

The third group of effects is connected to the use of space, a hallmark of the grammar of SLs. As mentioned previously, referents are often localized in the signing space, and this localization is connected to topicality (Barberà 2012) and contrast. Furthermore, localization can be realized not only directly (through pointing signs) but also indirectly by means of body leans and dominance reversals. As has already been suggested, these

mechanisms may be relevant for the discussion of the universality of IS notions (Section 40.4.1.2).

Finally, another interesting difference between SLs and spoken languages has surfaced in the discussion of structures that have been analysed as *wh*-clefts, a construction also attested in spoken languages. Recently, however, it has been claimed that these structures actually constitute question-answer pairs of a type not attested in spoken languages (Caponigro and Davidson 2011). It is not clear how this phenomenon can be directly connected to the visual-gestural modality of SLs; however, if it is confirmed that only SLs have such pairs, a modality-specific explanation would be welcome.

To sum up, the discussion in this chapter reveals that across SLs, IS is expressed by syntactic and prosodic strategies that are similar to those that have been described for spoken languages. Crucially, the basic IS notions, such as topic and focus, which have been developed based on spoken languages alone, can also be applied to SLs. However, modality, as manifested in multiple simultaneously used articulators and the use of space, also has its effect on the encoding of IS, as it allows SLs to employ means of expressing IS that are not available in spoken languages. (p. 834)

Notes:

(¹) Following standard conventions, SL examples are glossed in English in SMALL CAPS. Obviously, these glosses do not provide any information about the phonological form of a particular sign. Subscript numbers (in some examples, subscript letters) indicate points in the signing space used in pronominalization and verbal agreement, whereby ‘1’ is used for a locus close to the signer, ‘2’ for a locus close to the addressee, and ‘3’ for established loci and loci close to present third-person referents. INDEX/IX stands for a pointing sign (usually with index finger extended) and POSS for a possessive pronoun. The convention SIGN-SIGN is used when two English words are necessary to gloss a single sign; SIGN^SIGN indicates that two signs are combined in a compound. Lines above the glosses indicate the scope (i.e. onset and offset) of a particular non-manual marker. Note that abbreviations used may refer to the form (e.g. ‘br’—brow raise) or the function (e.g. ‘top’—topic) of a particular marker. Other abbreviations used in this chapter include: ‘neg’—negative headshake and ‘wh’—wh-question marker (further abbreviations will be explained in the context of specific examples).

(²) Slobin (2013) goes further by claiming that *all* SLs are topic-prominent, based on Li and Thompson’s (1976: 466) observation that ‘[i]n topic-prominent languages, there will be a surface coding for the topic, but not necessarily for the subject’.

(³) Aarons (1994: 154) also provides the corresponding example with the topicalized subject JOHN (JOHN_i, t_i LOVE MARY). In this case, only the prosody (non-manual marking and pause) indicate that we are dealing with a topic construction, as the word order is SVO. Note that it is crucial that the verb in (5) is a plain verb, as it is commonly assumed that agreeing verbs may license empty arguments (*pro*) in subject and object position; that is, in the presence of an agreeing verb, it cannot be determined whether the topic is moved (trace in argument position) or base-generated (*pro* in argument position).

(⁴) Janzen (1999) argues that the non-manual topic marker (in particular, raised eyebrows) is grammaticalized from a communicative questioning gesture commonly used by speakers. This non-manual co-speech gesture entered the grammar of ASL as a yes/no question marker and then developed further into the topic marker (for grammaticalization in SLs, see Pfau and Steinbach 2011).

(⁵) Liddell (1980) and Aarons (1994) further observe the presence of a head nod ('hn') on the subject of the main clause in case of VP topicalization; see example (i) (Liddell 1980: 30).

_____ top hn
(i) CHASE CAT, DOG
'As for chasing the cat, the dog did it.'

(⁶) The example actually comes from a study on pauses in ASL by Grosjean and Lane (1977). Ingram does not provide the non-manual marker in his gloss, but points out that the constituent GIRL SMALL carries a non-manual topic marker. The commas reflect pause durations as measured by Grosjean and Lane.

(⁷) With respect to SL, Puglielli and Frascarelli (2007) do not specify the hierarchical position of the Focus Phrase, but only point out that 'Focus is realized in a position in the C-domain that is higher than the subject (but lower than a Topic)' (2007: 155). For spoken language, they establish the sequence ShiftP > ContrP > FocP > FamP > IP. Moreover, they explicitly claim that only FamP is recursive. They base their arguments on the data provided by Aarons (1994), but it has to be pointed out that (i) they neglect the fact that examples like (13b) are only marginally acceptable and (ii) they wrongly claim that the combination of two base-generated (aboutness) topics is ungrammatical in general (see (12b)).

(⁸) For a recent discussion of different analyses, see Wilbur (2012).

(⁹) See Wilbur (1997) for a discussion of other types of clefts attested in ASL.

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