

4 Information structure

Summary 4.1 Focus. – 4.2 Topic. – 4.3 Morphological and prosodic markers of topic and focus.

The expression *information structure* refers to the way in which information is packaged in relation to the context and the previous knowledge of the interlocutors. The status of the information is considered with respect to the addressee's knowledge and can be codified as new or old. Consider for example the discourse reported below.

_____ wh
A: GIANNI BUY WHAT
B: GIANNI HOUSE BUY
'What did Gianni buy?' 'Gianni bought a house.'

The sign HOUSE indicates to the addressee that Gianni did not buy a car or a bike, but a house. In this case, HOUSE represents the new information which was implicitly selected among a set of other possible entities. These possible entities are called alternatives, and the new information item is considered a focus [PRAGMATICS 4.1].

On the other hand, in the same sentence, the proper name GIANNI is known both by the speaker and the interlocutor. Since both of them understand which specific individual this name refers to, it is considered a topic [PRAGMATICS 4.2]. Topics are generally identified as old or given information since they are shared between the speaker and the addressee.

Another relevant notion related to information structure is contrast. Contrast is a more general notion and it can apply to both the focus and the topic. Contrastive focus [PRAGMATICS 4.1.3] is used to introduce a new piece of information in substitution of a previously given piece of information. Contrast can also apply to two or more topics [PRAGMATICS 4.2], when previously mentioned entities are contrastingly compared.

Information structure concerns the organisation of sentences and the sentence internal organisation of units of information linked to larger pieces of text. This differs from the discourse structure, which concerns the way in which sentences are related in a broader context. These two levels can overlap.

Information structure in LIS can be identified by means of syntactic, morphological, or prosodic cues. The present section provides a description of focus, topic and the non-manual markers involved in their realisation.


4.1 Focus

Focus is used to convey new information. It is also defined as a linguistic expression identifying a set of alternatives which are relevant for its interpretation. This is demonstrated in the discourse reported below.

wh

A: IX₂ BUY Q_{artichoke}

foc

B: IX₁ CAR NEW BUY IX₁ 
 'What did you buy?' 'I bought a new car.'


The focus item CAR automatically creates in the mind of the addressee a set of other alternatives (house, bike, pullover...), and among these unpronounced alternatives the focus is the one chosen. Depending on its scope, focus can be broad or narrow. Broad focus [PRAGMATICS 4.1.1] carries new information within the whole sentence, and it generally occurs as the answer to a general question like 'What happened?'. Narrow focus [PRAGMATICS 4.1.2] concerns a single phrase (or sign). It can only introduce a piece of new information denoting a particular concept or entity, or it can have a contrastive or corrective meaning. If focus is corrective, it denies a previously mentioned item, substituting it with the correct one [PRAGMATICS 4.1.3]. Another type of focus is emphasis. It highlights an item by repeating it at the end of the sentence, or by reinforcing it with a particular prosodic contour [PRAG-

MATICS 4.1.4]. Finally, focus can also be doubled in order to place stress into a specific expression [PRAGMATICS 4.1.5].

4.1.1 All-new focus

All-new focus refers to those sentences which lack background information. These sentences are also considered instances of broad focus, because they are completely composed of new information. In LIS, these sentences can be marked by head nod and eye blink at the end, or the lengthening of the last sign.


_____ wh
A: HAPPEN Q_{artichoke}

_____ foc
B: GIANNI ACCIDENT DONE 
'What happened?' 'Gianni had an accident.'

4.1.2 New information focus


In new information focus, only a part of the sentence conveys new information. Generally, it can be used as an answer to a specific question, as in the discourse stretch below.

_____ wh
A: IX₂ BUY Q_{artichoke}

_____ foc
B: IX₁ CAR NEW BUY IX₁ 
'What did you buy?' 'I bought a new car.'

In the example above, NEW CAR is the part of the sentence conveying new information. On the other hand, the subject (IX₁) and the verb (BUY) represent the background, which conveys old information. Generally, new information focus follows the background. Another similar example is presented below.

_____ wh
A: FOOD VARIOUS IX₂ IMPOSSIBLE_NO_WAY WHICH


_____ foc
B: IX₁ C-A-P-P-E-R-I PE IX₁ IMPOSSIBLE_NO_WAY 
'What kind of food do you hate most?' 'I hate cappers.'

However, in LIS it is also possible to find ellipsis in place of the part of the sentence conveying background information. Indeed, for signers this is the most natural strategy to answer a specific question. The example below reports a case in which new information (PIZZA) is conveyed by focus and background information is elided as a result of ellipsis.

_____ wh

A: FOOD VARIOUS LIKE MOST WHICH


_____ foc

B: PIZZA 

‘What kind of food do you like most?’ ‘Pizza.’

New information focus can also be expressed by question-answer pairs, specifically by the answer of the construction. This is a strategy often used by signers to give prominence to the item contained in the answer. Note that the question part of this construction and typical content interrogatives [SYNTAX 1.2.3] have different non-manual markers.

_____ wh _____ foc

IX₁ FOOD LIKE WHICH PIZZA 


‘The kind of food I like is pizza.’

4.1.3 Contrastive focus

Contrastive focus conveys a new piece of information that contrasts with a previously mentioned item. Contrast is a broad notion that can also appear out of the blue, referring to a larger part of the sentence. However, contrastive focus are pieces of information which deny or correct previous statements. In the example below, SUSHI represents the contrastive focus and appears before the personal pronoun (IX₁) and the verb (ADORE), which convey background information.

Context: Someone says that the signer likes pizza.

_____ foc

NOT. IX₁ PIZZA_a IX_a IX₁ IMPOSSIBLE_NO_WAY_a. IX_b SUSHI_b IX₁ ADORE_b 

‘No! I hate pizza, I love sushi!’

Contrastive focus in LIS may also be in sentence-initial position, as shown in the example below.

_____ y/n
A: PIZZA LIKE IX₂

_____ foc
B: IX₁ IMPOSSIBLE_NO_WAY. SUSHI PREFER
'You do like pizza.' 'No! I prefer pizza!'



Differently from new information focus, which is not frequently accompanied by non-manual markers, corrective focus may be marked by non-manual and manual markers [PRAGMATICS 4.3.1].

It is important to note that corrective focus also allows ellipsis of the background information containing the wrong item. In fact, this is considered a redundant repetition of the previous question or statement and it can be avoided, as in the example below.

A: CAKE LIKE IX₂

_____ foc
B: IX₁ NOT CHESTNUT PREFER
'You do like cakes.' 'No! I prefer chestnuts.'



4.1.4 Emphatic focus

Emphatic focus is used for highlighting a particular item or drawing attention to it. Emphasis may be conveyed by repeating the focused item. The repeated items are usually morphologically simple elements or syntactic heads, for example modals, verbs, tense signs, negative signs, quantifiers, nouns, and *wh*-elements. The example below shows a repeated modal verb (BE_ABLE).

Context: Someone asks if the signer runs.

_____ foc
YES IX₁ BE_ABLE IX₁ RUN BE_ABLE IX₁
'Yes, I can, I can run.'



Emphasis can also be conveyed through the repetition of the emphatic lexical item SELF OR IX_PERSON [LEXICON 3.7.4].

_____ foc
IX₁ SELF PAY SELF
'I have paid for myself!'



In LIS, emphasis can be conveyed by other strategies as well, such as particular intonation contours, generally based on specific non-manual markers, especially wide eye and raised eyebrows.

4.1.5 Focus doubling

Doubling is another common way to mark focus and place emphasis on an expression. Similarly to emphatic focus [PRAGMATICS 4.1.4], focus doubling generally concerns morphologically simple elements or syntactic heads (modals, verbs, tense signs, negative signs, quantifiers, nouns, *wh*- elements).

_____ foc

IX₁ PASTA ALL EAT DONE IX₁ ALL

'I have eaten all the pasta, all of it!'



4.2 Topic

In spoken and sign languages, a sentence is generally subdivided in topic and comment. Topics are defined as old or given linguistic expressions which are considered familiar or uniquely identifiable between the speaker and the addressee. Generally, the topic item is defined as old or given because it is an entity previously mentioned or previously introduced in the communicative context. The comment, on the contrary, is that part of the sentence which introduces new information [PRAGMATICS 4.1].

Topic items are commonly supposed to be identifiable in the mind of the interlocutor. In LIS, topics are distinguishable from a prosodic, syntactic and pragmatic point of view. These elements might present specific features. Prosodically, topic items can be accompanied by a specific intonation contour [PRAGMATICS 4.3.2], or can be separated from the comment by specific intonational cues, such as head nod and eye blink. Non-manual markers which are involved in topic items are further specified in [PRAGMATICS 4.3.2]. Syntactically, topics can be found in the initial part of the sentence.

In LIS, topic elements are not always marked by specific intonational cues and they are not necessarily placed in the very initial part of the sentence. Topics are recognizable through pragmatic criteria which allow a further differentiation in three distinct categories: aboutness topics, scene-setting topics and contrastive topics.

Aboutness topics establish what the sentence is about. They convey the information about which the comment predicates something new. A single sentence may host only one aboutness topic in LIS. An example of aboutness topics is reported in the sentence below.


AbTMAN IX_a IX₁ 3_a TELL₁ EVERYTHING

'The man has told me everything.'



Aboutness topics (AbT) are argument of the predicate and they can also be realised as pronominal forms, particularly when the communicative context allows such simplification. In particular, this happens when a previously introduced topic in a discourse is considered by the signer accessible or easily retrievable in the mind of the interlocutor.

Moreover, in the case of very prominent information (namely when an entity is kept consistent across several sentences and it is completely accessible in the mind of the interlocutor) the signer can decide to omit the topic referent. An example of these two possibilities is reported below. In the second clause, the pronominal form (IX₃) refers to a previously introduced character (DOG), appearing in the first clause. Within the second clause, the verb GO_AWAY allows the omission of the subject (MAN). Indeed, the repetition of MAN would be useless, since the referent is supposed to be prominent and easily accessible in the mind of the addressee.

DOG IX(dem)_a HUNGER STRONG. MAN CL(G): 'walk'. IX_{3a} CL(F):
'eyes_move' GO_AWAY SAD 

'The dog is starving. A man walks by. He (the dog) follows him with his eyes, but the man goes away, and the dog is sad.'

As opposed to aboutness topics, scene-setting topics are not arguments of the verb in LIS, rather they are adjuncts with the function of establishing the frame setting of a sentence. In other words, these types of topics provide spatial and temporal information which set the scene of the sentence. For this reason, scene setting topics very commonly occur in the very initial part of the sentence, also preceding the aboutness topic item.

An example of a scene setting topic of time, here indicated as Sst_T, is presented in bold below.

Sst_T

TOMORROW RAIN MAYBE BE_POSSIBLE

'Tomorrow, it will probably rain.'



An example of a scene setting topic of location, here indicated as Sst_L, is reported below.

Sst_LTABLE KEY CL(G): 'be_at_a' IX_{3a} POSS₁ TOUCH_a FORBIDDEN


'On the table, there is a key, it is mine. Do not touch it.'




More than one scene-setting topic expressions may be produced in the same sentence providing spatio-temporal information. An example of this case is reported below. It includes: i) a scene-setting topic of time (YESTERDAY), ii) a scene-setting topic of location (CINEMA IX(LOC)), and iii) an aboutness topic (M-A-R-I-A). Aboutness and scene setting topics are very likely to co-exist in the same sentence. In most of these cases, the scene setting topic of time precedes the scene-setting topic of location and only after them the aboutness topic is realised.

Sst-T Sst-L Abt
 YESTERDAY CINEMA IX(LOC) M-A-R-I-A FILM WHITE BLACK VARIOUS SEE
 ‘Yesterday, at the cinema, Maria saw various white and black movies.’


Topics can also have a contrastive function, namely, they can express an opposition between two previously mentioned referents. An example is the case below where the two referents GIANNI and MARIA are contrasted and defined as *Contr_top*. In the same example, DOG IX₃ is likely to be interpreted as the aboutness topic of the sentence. The contrastive topics in the example below are produced after the aboutness topic.

Abt Contr_top1 Contr_top2
 DOG_a IX_a GIANNI_b LOVE_a MARIA_c HATE_a 
 ‘As for the dog, Gianni loves him while Maria hates him.’

It is important to distinguish between contrastive topic and contrastive focus [PRAGMATICS 4.1]. While topics can only convey contrast in the case of parallel opposed items, focus items also have a corrective function, namely they can correct a statement previously expressed. An example of contrastive focus is reported below.


Context: Someone says that you like pizza.
foc
 NOT IX₁ PIZZA_a IX_a IX₁ IMPOSSIBLE_NO_WAY. IX_b SUSHI_b IX₁ ADORE_b 
 ‘No! I hate pizza, I love sushi!’

In the case of contrastive topic, items are also present in the sentence, they generally tend to follow the aboutness topic item, no matter if they are subjects or objects. The example below shows contrastive topic subjects.

Context: What do Maria and Gianni think about the cauliflower?
Abt Contr-top1 Contr-top2
 CAULIFLOWER GIANNI IMPOSSIBLE_NO_WAY MARIA ADORE 
 ‘As for the cauliflower, Gianni hates it while Maria loves it.’

The example below shows contrastive topic objects.

Context: What does Maria think about the pizza and the fish?

<u>Abt</u>	<u>Contr-top1</u>		<u>Contr-top2</u>		
MARIA FISH _a IX _a	IMPOSSIBLE_NO_WAY		PIZZA _b IX _b	ADORE	

'As for Maria, she hates fish, while she adores pizza.'

By considering these examples in LIS, it is possible to establish a potential order which holds true among the three types of topics appearing in a sentence: Scene-setting Topics of Time > Scene-setting Topics of Location > Aboutness Topics > Contrastive (parallel) topics.

4.3 Morphological and prosodic markers of topic and focus


The following section provides a description of the manual and non-manual markers involved in the production of topic and focus in LIS.

4.3.1 Focus

Focus in LIS can be marked by several strategies: syntactical, morphological, lexical, and prosodic. As for syntax, focality in LIS may affect word order in both contrastive and new informational focus [PRAGMATICS 4.1]. As for the lexical strategies, focused items may be accompanied by focus particles, such as *ONLY*, *ALSO* and *EVEN* (more details are provided below). As for the morphological and prosodic cues which accompany focus elements, these markers can be manual or non-manual. Manually, focus items can be affected by a lengthening of the sign, a larger amplitude, and a higher speed in signing. Non-manually, some types of focus can be accompanied by raised eyebrows, wide eyes, head forward, and leftward or rightward head tilt and/or body lean. Furthermore, some non-manuals fulfil the function of marking prosodic boundaries among constituents: in LIS, these markers are head nod and eye blink. The use of these markers does not seem to be mandatory: their use might depend on the type of focus or on the pragmatic context. In the remainder of the section, for each type of focus, we provide a description of the manual and non-manual markers used by LIS signers.


New information focus [PRAGMATICS 4.1.2] in LIS is not obligatorily marked by manual and non-manual features. It is very often accompanied by mouthing or mouth gestures, but it does not seem to be marked by other non-manual cues. As for the manual features, signs conveying new information focus are lengthened and can be realised with a wider amplitude than non-focus signs.

wh
A: IX₂ BUY Q_{artichoke}

foc
B: IX₁ CAR NEW BUY IX₁ 
'What did you buy?' 'I bought a new car.'


Similarly to new information focus, contrastive focus [PRAGMATICS 4.1.3] may be syntactically manipulated, by changing the word order position. However, differently from new information focus, contrastive focus is mostly marked by manual and non-manual features. The most frequent non-manual markers involved in the realisation of contrastive focus items are mouthing, raised eyebrows (re), and wide eyes (we). They generally spread over the item or over the whole clause, as in the example below. Multiple head nods (hn++) can also accompany the production of the focused part of the clause. Sometimes the contrastive focus item is also marked by forward body lean (bl-f), which signals prominence.

Context: Someone says that the signer likes pizza.


hn++
we
re
NOT IX₁ CHESTNUT IX₁ LIKE IX₁ 
'No, I do love chestnuts!'


Contrastive meaning can also be conveyed through leftward (bl-left) and rightward (bl-right) body lean, so that the negated item and the corrected focus item are located in two different positions in space.

Context: Someone says that the signer likes pizza.

bl-left bl-right 
IX₁ PIZZA_a IX_a IX₁ IMPOSSIBLE_NO_WAY IX₁ ADORE_b SUSHI_b
'No, I do not like pizza, I adore sushi!'


Emphasis [PRAGMATICS 4.1.4] can be conveyed both through the use of the lexical items PERSON (a) or SELF (b) and through non-manual markers, such as wide eye (we) and forward body lean (bl-f).

we
bl-f
a. IX₁ SEE_a PRESIDENT_a PE_a PERSON_a 
'I saw the President in person!'

b. IX₁ SELF PAY SELF 
'I pay for myself!'

In LIS, there are lexical particles which attribute focus to a specific item, thus modifying its meaning. The most frequent particles in LIS are ONLY, ALSO and EVEN, shown in the examples below. They commonly follow the focus item, but they may also precede it. ONLY is a restrictive focus particle which excludes the alternatives from a given set. The particle ONLY is marked by raised eyebrows (re) and wide eyes (we).

we
re


IX₁ PASTA_a ONLY_a SAUCE_b ADD NEG_{S_b} BETTER 

'I (want) pasta only, it is better not to add any sauce.'

By contrast, ALSO conveys an additive meaning, establishing that at least one more element is added to the focus set. The focus particle ALSO is generally accompanied by multiple head nods (hn++), as shown below.

Context: Someone says that s/he knows Anna.

hn++


ALSO IX₁ 

'Me too.'

The focus particle ALSO is also shown in the discourse stretch below.

A: IX₁ SUSHI IX₁ ADORE


hn++

B: ALSO IX₁ 

'I love sushi.' 'Me too.'

A second use of ALSO exists and it not only expands the focus set including an additional constituent from an alternative set, but it also conveys an additional scalar interpretation to the focus item, implicating that the inclusion of the associated item is unlikely. This particle has the meaning of 'even' and it is mostly marked by furrowed eyebrows (fe) and single (hn) or multiple head nods (hn++). We provide an illustrative example below.


top hn++
we

POPE_a IX_a GROUP_b GOD BELIEVE NOT ALSO LIKE IX_b IX_a 

'Even atheist people like the Pope!'

Sometimes, when the focus items are more than one, specific non-manual markers spread over the various items. In the example below, the contrastive focus involves two items: the first one (CHOCOLATE) is

marked by a leftward body lean, while the second one (STRAWBERRY) is accompanied by a rightward body lean in order to underline the existence of two distinct entities. It is interesting to note that, in such case, raised eyebrows spread only over the first item.

$$\begin{array}{c} \text{re} \\ \text{wh} \quad \text{bl-left} \quad \text{bl-right} \end{array}$$
 IX₂ WANT PREFER WHICH CHOCOLATE STRAWBERRY 


'Which one do you prefer? Chocolate or strawberry?'

4.3.2 Topic

As in other sign languages, topics in LIS might be non-manually marked. Although the presence of prosodic markers is not mandatory, it is possible to identify some recurrent tendencies among topic types. In this section, a description of these uses is provided.


Aboutness topics in LIS are mostly marked by raised eyebrows and squint eyes. We usually find one of these two markers. Raised eyebrows (re) are shown below.

$$\begin{array}{c} \text{re} \\ \text{dom:} \quad \text{BOSS IX}_a \text{ CL(V): 'walk_to_b' CL(V): 'fall_at_b'-----} \\ \text{n-dom:} \quad \text{CL(V): 'fall_at_b' DOG COME} \end{array}$$


$$\begin{array}{c} \text{dom:} \quad \text{CL(V): 'fall_at_b'-----} \\ \text{n-dom:} \quad \text{CL(curved open V): 'jump_on_b'++} \end{array}$$


'The boss was walking when he fell on the ground, then the dog came and jumped on him several times.'

The example below shows the combination of aboutness topic and squint eyes (sq).

$$\begin{array}{c} \text{sq} \\ \text{MAN IX}(\text{dem}) \text{ IX}_1 \text{ TELL}_1 \text{ EVERYTHING} \\ \text{'That man has told me everything.'} \end{array}$$



However, in rarer cases, it is possible to find both of them accompanying the same topic expression, as in the example below.

$$\begin{array}{c} \text{re} \\ \text{sq} \quad \text{wh} \\ \text{DOME MILAN CL(spread curved open 5):} \\ \text{'be_at' DIRECTION WHICH DIRECTION O-V-E-S-T} \\ \text{'The front of the dome of Milan is directed toward the West.'} \end{array}$$



In LIS, squint eyes seem to play a role in the retrievability of the information conveyed by the topic. It is possible to suppose that a signer uses this marker when the interlocutor is supposed to already know the topic entity. Moreover, in LIS, there is a statistically significant correlation between the marker squint eyes and aboutness topics [PRAGMATICS 4.2] which are realised as nominal expressions. Therefore, contrarily to pronouns which are easily retrievable topics, it is possible that the marker squint eyes accompanies topics which are not easily retrievable.

Conversely, aboutness topics [PRAGMATICS 4.2], which are realised as pronominal forms, are more likely to be marked by another specific non-manual marker: head tilt back. This is displayed in the example below.


Finally, aboutness topics which are realised as nominal expressions are also likely to be divided from the remaining part of the sentence by two non-manual markers: eye blink (eb) and head nod (hn). These markers can occur after the realisation of the aboutness topic item separately or together, the latter case is displayed below.

hn
sq eb
 DOG IX_{3a} CHILD++ SEVEN SASS(flat open 4): ‘little’++ BEAUTIFUL 
 ‘The dog had seven cute little cubs.’

Similarly to aboutness topics, scene-setting topics [PRAGMATICS 4.2], of both time and location, might be accompanied by raised eyebrows and squint eyes. We can find one of these markers over the topic expression or they can be both present in a layering fashion, as in the example below, where these two non-manual markers accompany the scene setting topic of location (TREE).

re
sq
 TREE_a SASS(5): ‘shape_round’_a BIRD FLY CL(curved open v):
 ‘fly_on_top_of_a’ 
 ‘A bird flew to the top of a tree.’


Sometimes, when scene setting topics of time and scene-setting topics of location occur together in the same sentence, the non-manual markers might have scope over the entire topic expressions. An example of this is displayed below, where the raised eyebrow spread over both the scene-setting topic of time (YESTERDAY) and location (RESTAURANT INSIDE).

$\frac{hn}{re\ eb\ re}$
 YESTERDAY RESTAURANT INSIDE FISH_a GIANNI EAT DONE PIZZA_b 
 NOT_YET
 ‘Yesterday, at the restaurant, as for the fish, Gianni ate it, while pizza he didn’t.’

Moreover, similarly to aboutness topics, also scene-setting topics can be divided by a prosodic pause which is signalled by an eye blink and a head nod, as illustrated in the example above.

With regards to the realisation of contrastive topics [PRAGMATICS 4.2], they also show the presence of raised eyebrows and squinted eyes. Body leans to the left and to the right are mainly used as a specific signal of contrast, as displayed in the example below.

Context: What do Gianni and Maria think about the cat?

$\frac{hn\quad\quad\quad hn}{eb\quad\quad\quad eb\quad\quad\quad eb}$
 $\frac{re\quad\quad bl-right\quad\quad bl-left}{\quad\quad\quad\quad\quad\quad}$
 CAT IX_a GIANNI_b HATE_a IX_c MARIA_c LOVE_a 
 ‘As for the cat, Gianni hates him, while Maria loves him.’

Information on Data and Consultants

The descriptions in this section are partially based on the references below and partially on the elicitation of new data. The linguistic data illustrated as images and video clips have been checked and collected through spontaneous discourse, elicited sentences and grammatical judgments. The data above have been produced by a LIS native signing consultant involved in the SIGN-HUB Project.

Authorship Information

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