

# 1 Compounding

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**Summary** 1.1 Native compounds. – 1.2 Loan compounds. – 1.3 Compounds with fingerspelled components.

Compounds are the result of a linguistic process that combines two or more morphological units or stems. These stems can combine sequentially. However, since sign languages can use both hands as independent articulators, two stems can also be produced at the same time, and this leads to simultaneous compounds. In this case, the dominant hand produces one stem and the non-dominant hand produces the other one at the same time.

## 1.1 Native compounds

In this section we focus on native compounds, namely compounds formed by stems coming from the core lexicon [LEXICON 1.1] or from the non-core lexicon, which notably includes classifiers [LEXICON 1.2.1]. We discuss compounds including non-native lexicon (loan compounds) in [MORPHOLOGY 1.2].

### 1.1.1 Sequential compounds

In sequential compounds, two or more stems are signed one after another. In some of these, there are phonological reduction and assimilation processes, in others the stems are just fully expressed. As the stem can be part of the core and non-core lexicon (which include classifiers or pointing signs), there are four logical combinations of sequential compounds, as shown in the table below.

**Table 1** Possible patterns in sequential compounds

	<b>Core</b>	<b>Non-core</b>
<b>Core</b>	Core^Core	Core^Non-core
<b>Non-core</b>	Non-core^Core	Non-core^Non-core

Example of each of these combinations are shown below. An example of Core^Core is the compound for '(to) fall in love', composed by the core signs HEART and GOAL.



HEART^GOAL

'(To) fall in love'

(based on Santoro 2018, 156)

An example of Core^Non-core is the compound for 'hard disk', which is composed by the core sign MEMORY and by the SASS(flat open 5): 'rectangular\_prism' that denotes the size of the object itself [MORPHOLOGY 5.2].



MEMORY<sup>^</sup>SASS(flat open 5): ‘rectangular\_prism’  
 ‘Hard disk’  
 (recreated from Santoro 2018, 41)

An example of Non-core<sup>^</sup>Core is the compound for ‘fridge’ which is composed by a handling classifier [MORPHOLOGY 5.1.3], which denotes how to open the fridge, and by the core sign COLD.



CL(closed 5): ‘open\_the\_fridge’<sup>^</sup>COLD  
 ‘Fridge’  
 (recreated from Santoro 2018, 42)

An example of Non-core<sup>^</sup>Non-core is compound for ‘dishwasher’, which is composed by the handling classifier which denotes how to open the dishwasher itself and the classifier that denotes the movement of the machine.



CL(closed 5): ‘open\_the\_dishwasher’<sup>^</sup>CL(G): ‘spin’  
 ‘Dishwasher’ (recreated from Santoro 2018, 43)

## 1.1.1.1 Semantic structure

From the point of view of their semantic structure, there are compounds whose meaning can be deduced from the meaning of their parts, so they have a compositional meaning. These are called *endocentric*. When the meaning relation between each member and the whole compound is not compositional, the compound is called *exocentric*.

## 1.1.1.1.1 Endocentric compounds

A LIS example of endocentric compound is HEART<sup>^</sup>ATTACK. This compound is formed by two stems coming from the core lexicon.



HEART<sup>^</sup>ATTACK  
 'Heart attack'  
 (recreated from Santoro 2018, 50)

The meaning of the whole compound is compositionally obtained combining the meanings of the two members.

Another example is CL(4): 'columns'<sup>^</sup>CL(4): 'rows' for 'table/chart'. This compound is formed by two stems coming from the non-core lexicon (two classifiers).



CL(4): 'columns'<sup>^</sup>CL(4): 'rows'  
 'Table/chart'  
 (recreated from Santoro 2018, 54)

The meaning of whole compound (table, intended as an arrangement of numbers or symbols in rows on a page) is transparent.

#### 1.1.1.1.2 Exocentric compounds

An example of exocentric compound is  $ELECTRICITY \wedge CL(5)$ : ‘type’, meaning ‘computer’. This compound is formed by a stem coming from the core lexicon and by a classifier.



$ELECTRICITY \wedge CL(5)$ : ‘type’  
‘Computer’ (recreated from Santoro 2018, 51)

The compound is exocentric because the semantic relation between the first member ( $ELECTRICITY$ ) and the second member (the body part classifier) does not directly convey the concept of the whole compound, namely ‘computer’.

Another example is  $IX(\text{forehead}) \wedge \text{TRANSPARENT}$ , which means ‘psychology’. The first member is a pointing sign toward the forehead and it is related to the head or mind. The second member is a core sign meaning ‘transparent’.



$IX(\text{forehead}) \wedge \text{TRANSPARENT}$   
‘Psychology’  
(recreated from Santoro 2018, 53)

The meaning of the whole compound is not derived by the composition of these two members, namely the sign does not mean ‘the mind is transparent’. Therefore, this compound is exocentric.

Still, another example is YES<sup>^</sup>NO, which can be paraphrased in English as ‘Do something despite uncertainty or risk’. This compound is clearly not compositional, as its meaning is not given by the combination of the concepts conveyed by the signs YES and NO.



YES<sup>^</sup>NO

‘(To) do something despite uncertainty or risk’

(recreated from Santoro 2018, 55)

A final example of sequential exocentric compound is the sign for Ryanair.



PLANE<sup>^</sup>SASS(flat closed L): ‘little’

‘Ryanair’

(recreated from Santoro 2018, 65)

The sign Ryanair is composed by the sign PLANE expressed by a whole entity classifier and the sign for ‘little’ expressed by a SASS classifier. The literal meaning of the sign could be roughly paraphrased as ‘cheap airplane’. This would make the compound transparent if it referred to any low cost company. As it is the name of a specific low cost company, the compound is clearly exocentric.

## 1.1.1.2 Syntactic structure

A second important distinction concerns the syntactic structure of compounds. Irrespective of whether the meaning of a compound is predictable or not (that is, whether it is endocentric or exocentric), the relation between the two members of a compound could be either subordination or coordination.

## 1.1.1.2.1 Subordinate compounds

In a subordinate compound, one member can be identified by the head and the other member of the compound is its complement.

An example of this kind is the sign  $MEAT \wedge CL(5)$ : ‘flat’, which is composed by the sign  $MEAT$  (the head) and by a whole entity classifier.



$MEAT \wedge CL(5)$ : ‘flat’

‘(Meat) steak’

(recreated from Santoro 2018, 44)

Another kind of syntactic relation inside the compound is the attributive one. In this type of compound, one member is the head while the other one is a modifier, often an adjective. An example of this type of compound is the sign for  $MEMORY \wedge SASS(\text{flat open } 5)$ : ‘rectangular\_prism’, meaning ‘hard disk’, where the classifier modifies the sign  $MEMORY$ , which acts as the head of the classifier.



MEMORY<sup>^</sup>SASS(flat open 5): 'rectangular\_prism'  
 'Hard disk'  
 (recreated from Santoro 2018, 41)

#### 1.1.1.2.2 Coordinate compounds

Coordinate compounds involve members belonging to the same grammatical category which stay in a conjunction symmetrical relation. This can be an *and* or an *or* relation.

An example of coordinate compound is the sign MOTHER<sup>^</sup>FATHER, meaning 'parents'.



MOTHER<sup>^</sup>FATHER  
 'Parents'  
 (recreated from Santoro 2018, 46)

Another example of coordinate compound is YES<sup>^</sup>NO, already show above and repeated here.





YES^NO

'(To) do something despite uncertainty or risk'  
(recreated from Santoro 2018, 55)

This is a coordinate compound, which involves the sign YES and the sign NO.

### 1.1.1.3 Compounds involving Size-and-Shape Specifiers (SASS)

The examples discussed in the literature suggest that in compounds of this type, the SASS usually follows the lexical sign.

An example of this type in LIS is MEMORY^SASS(flat open 5): 'rectangular\_prism', meaning 'hard drive', already shown in the previous paragraph and repeated here.



MEMORY^SASS(flat open 5): 'rectangular\_prism'  
'Hard disk'  
(recreated from Santoro 2018, 41)

In LIS, it is also possible to find compounds in which the SASS is followed by a core sign. An example of this type of compound is the sign for 'driving license'.



SASS(curved open L): ‘rectangular’<sup>DRIVE</sup>  
 ‘Driving license’  
 (recreated from Santoro 2018, 58)

This is a sequential compound in which the first member is a SASS classifier which shows the shape of the driving license and the second member is the core sign for ‘drive’.

### 1.1.2 Simultaneous and semi-simultaneous compounds

Simultaneous compounding is a modality-specific morphological process. The next section describes it in detail, providing illustrative examples from LIS.

#### 1.1.2.1 Simultaneous compounds

In simultaneous compounds, two or more stems are expressed at the same time. This is possible because each hand can simultaneously produce a different stem. Simultaneous compounds involve several processes, such as phonological reduction [PHONOLOGY 3.1.3] and assimilation [PHONOLOGY 3.1.1], namely one of the two stems is not fully articulated.

Simultaneous compounds expressed by two full stems have not been found in LIS (yet). Simultaneous compounds (as non-simultaneous ones) can be: i) semantically distinguished between endo- and exocentric category and ii) syntactically distinguished between subordinate and coordinate compounds.

First, we focus on the semantic distinction between simultaneous endocentric and exocentric compounds. An example of endocentric simultaneous compound is the sign for ‘fax’.



CL(unspread 5): 'flat'(h1) ^ CL(unspread 5): 'cube'(h2)  
 'Fax'  
 (recreated from Santoro 2018, 63)

This compound is composed by a whole entity classifier expressed by the dominant hand (h1), which represents a paper. The movement associated to this classifier represents the action of sending a fax. The non-dominant hand (h2) is a classifier representing the box containing the fax machine.

Another example of endocentric simultaneous compound is the sign for 'pencil case'.



CL(closed G): 'zip\_open'(h1) ^ CL(unspread curved open 5):  
 'case'(h2)  
 'Pencil case'  
 (recreated from Santoro 2018, 60)

The head of the compound is represented by the non-dominant hand (the case), while the dominant hand specifies an attribute (the zip). It is endocentric because its meaning is transparent and compositional.

An example of simultaneous exocentric compound is the sign for 'authorisation'.



CL(closed 5): 'stamp'(h1)^CL(unspread 5): 'paper'(h2)  
 'Authorisation'  
 (recreated from Santoro 2018, 64)

The dominant hand is a handling classifier which represents the manipulation of a stamp. The non-dominant hand is a whole entity classifier which represents a paper. The literal meaning of 'putting a stamp on a paper' is shifted to the meaning 'authorise' or 'authorisation', which is not transparent anymore.

Second, we focus on the syntactic distinction between simultaneous subordinate and coordinate compounds. An example of simultaneous subordinate compounds is the sign for 'fork'. It is composed by two whole entity classifiers articulated at the same time.



CL(V): 'fork'(h1)^CL(5): 'dish'(h2)  
 'Fork'  
 (recreated from Santoro 2018, 63)

The whole entity on the non-dominant hand refers to thin, hard object (it could be a dish). The whole entity on the dominant hand refers to the fork itself. It is a subordinate compound since the dominant hand acts as the head of the whole compound and the non-dominant hand represents the complement the fork is used on.

Another example of simultaneous subordinate compound is the sign for 'pencil sharpener'.



CL(G): 'pencil'(h1)<sup>^</sup>CL(flat open 3): 'sharpener'(h2)  
 'Pencil sharpener'  
 (based on Santoro 2018, 177)

It is composed by two classifiers. The first one is a whole entity classifier that refers to a thin long object (pencil in this case). The second, on the non-dominant hand, is a whole entity classifier that refers to small and rectangular objects (the pencil sharpener itself). The head of the compound is the non-dominant hand, that represents the referent of the whole compound. The dominant hand represents the complement of the head, which is the object the pencil sharpener is used with.

An example of simultaneous coordinate compound is the sign for 'salami', composed by two classifiers.



CL(unspread 5): 'slice'(h1)<sup>^</sup>CL(unspread curved open 5): 'salam\_i\_hold'(h2)  
 'Salami'  
 (recreated from Santoro 2018, 61)

The dominant hand represents the concept of slice using a whole entity classifier, the non-dominant hand represents the concept of handling something using a handling classifier. The combination of the two members expresses the concept of 'salami'.

As previously mentioned, the members of a compound can be in an attributive relation. An example of an attributive simultaneous compound in LIS is the sign for 'iPhone':



CL(3/5): ‘touch’(h1)<sup>^</sup>CL(unspread curved open 5): ‘iPhone\_  
hold’(h2)  
‘iPhone’  
(based on Santoro 2018, 178)

The compound ‘iPhone’ is composed of the handling classifier on the non-dominant hand, which represents how the iPhone is handled. The other member, expressed by the dominant hand, is a body part classifier which represents how we touch it. The head of the compound is the handling classifier on the non-dominant hand, because it refers to the object ‘iPhone’, while the body part classifier on the dominant hand is a modifier, since it explains how to use the object on the other hand.

Another example of attributive simultaneous compound is the sign for ‘pencil case’.



CL(closed G): ‘zip\_open’(h1)<sup>^</sup>CL(unspread curved open 5):  
‘case’(h2)  
‘Pencil case’  
(recreated from Santoro 2018, 60)

Both members are handling classifiers. The head of compound is on the dominant hand which refers to the zip. The non-dominant hand shows how the object (the pencil case itself) is hold. An evidence that confirms that the head is on the dominant hand is that one can modify the form of pencil case, but the meaning of whole compound does not change, as it always refers to a pencil case.

### 1.1.2.2 Semi-simultaneous compounds

To be developed.

## 1.2 Loan compounds

The everyday contact between LIS and Italian results in phenomena such as borrowings of lexical elements of LIS from the lexicon of the dominant language [LEXICON 2]. The use of fingerspelling [LEXICON 2.2.2] is a way in which borrowing takes place and this affects compounding. Loan compounds can be of two types: faithful loans and modified loans. They are discussed in the next sections.

### 1.2.1 Faithful loans

Faithful loan are compounds in which the structure of the compound in the spoken language and the structure of the compound in the sign language is identical.

An example of faithful loan is the sign  $FISH \wedge SWORD$ , ‘swordfish’ (Ita. *pescespada*).



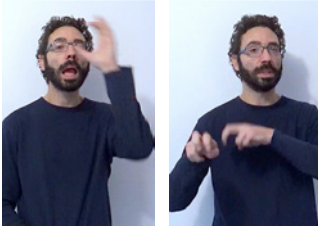
$FISH \wedge SWORD$

‘Swordfish’ (based on Santoro 2018, 68)

The first member is the core sign  $FISH$ , and the second member is the core sign  $SWORD$ , which is articulated on the nose on the signer. Here there is a one-to-one relation with the Italian compound, which is composed by *pesce*, ‘fish’, and *spada*, ‘sword’, just like in LIS.

### 1.2.2 Modified loans

In modified loans, the syntactic order between the stems in the sign and in the spoken compound is reversed. An example of modified loan compound is the sign for the Italian word *agriturismo*, ‘B&B farmhouse’.



TOURISM<sup>^</sup>CULTIVATE  
 ‘B&B farmhouse’  
 (recreated from Santoro 2018, 69)

In this LIS compound, the first stem is the core sign *TOURISM* and the second one is the core sign *CULTIVATE*. Notice that in Italian the order of the corresponding words is reversed, as the compound *agriturismo* can be literally translated as ‘cultivate-tourism’.

## 1.3 Compounds with fingerspelled components

This section describes compounds in which one of the stems is expressed by a fingerspelled entry. Two types of compounds with fingerspelled components can be found: native-like and loan-like compounds. Both can be expressed in sequential or simultaneous fashion.

### 1.3.1 Sequential

This section deals with sequential compounds containing fingerspelled components.

#### 1.3.1.1 Native-like

Native-like compounds contain a letter that typically stays for the initial of the corresponding Italian word, but do not correspond to an Italian compound.



In LIS, an example of sequential compound of this type is the one expressing the concept of 'culture', which is formed by the fingerspelled C, which corresponds to the first letter of the Italian word *cultura*, and by the sign for the possessive [LEXICON 3.7.3].



$C^{\text{POSS}(5)}_3$   
 'Culture'  
 (recreated from Santoro 2018, 74)

### 1.3.1.2 Loan-like

Loan-like compounds include fingerspelled components from the spoken language too. However, here the structure of the compound is the same in the spoken and in the sign language.

At present time, loan-like compounds have not been identified in LIS.

### 1.3.2 Simultaneous

An example of a simultaneous native-like compound is the sign for 'law'.



$L(h1)^{\text{CL}(unspread\ 5)}$ : 'flat'(h2)  
 'Law' (recreated from Santoro 2018, 76)

This simultaneous compound is composed by the fingerspelled letter L, which refers to the first letter of the Italian word *legge*, and by a whole entity classifier, which in this case refers to the concept of a concrete flat object on which the law is written.

#### **1.4 Phonological and prosodic characteristics of compounds**

To be developed.

##### **1.4.1 Phonological characteristics**

To be developed.

##### **1.4.2 Prosodic characteristics**

To be developed.

#### **Information on Data and Consultants**

The descriptions in these sections are based on the references below. For information on data and consultants see the references. The images exemplifying the linguistic data have been produced by a LIS native signer.

#### **Authorship Information**

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#### **References**

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