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Description and Analysis of Evaluative Constructions in Italian Sign Language (LIS)

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Coordinatore del Dottorato
Ch.mo Prof. Enric Bou Maqueda

Supervisore
Ch.ma Prof.ssa Chiara Branchini

Dottoranda
Elena Fornasiero
Matricola 835039

To Riccardo

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Annotation Conventions

SIGN	English gloss identifying a sign
SIGN++	Reduplication of a sign
SIGN-SIGN	Two affixed morphemes
WORD_WORD	Multi-word translation of a single sign
SIGN^ SIGN	Compound
$_{3a}$SIGN$_{3b}$	Verbal agreement
nmm SIGN	Sign with non-manual markers
CL(handshape): ‘interpretation in English’	Classifiers
SASS(handshape): ‘interpretation in English’	Size and Shape Specifier
dom:	Dominant hand
n-dom:	Non-dominant hand

Examples included in this dissertation are taken from different sources. A code providing information about the source and/or the signer is given between square brackets, on the translation line. The sources are: (i) the SIGN-HUB LIS Grammar [SHLISG], (ii) a corpus of LIS fairy tales [LISFT], and (iii) elicited data.

To illustrate, the source code [SHLISG-2-1_5_1] refers to an example taken from Part 2, section 1.5.1 of the SIGN-HUB LIS Grammar (to appear). Examples from the corpus of fairy tales are specified through the acronym LISFT, followed by the title of the fairy tale considered. For instance, the code [LISFT_Riccioli d'oro] refers to the fairy tale *Riccioli d’oro*. Elicited data are labelled as follows: [MI_na_150]. In the code, (i) the first two letters refers to the signer; (ii) the following letters refer to the task (‘na’ for the narration task; ‘od’ for the object description task; ‘odS’ for the task eliciting SASSes; ‘gj’ for grammaticality judgments); (iii) the last number either refers to the number of the test item (referring to the numeration provided in Appendixes A1 and A3) in the case of examples taken from the object description tasks, or to the number of the annotation in the case of examples taken from the narration task.

Non-manual markers

ht	head tilt left- or rightwards
re	raised eyebrows
br	inner brow raised
fe	furrowed eyebrows
sq	squinted eyes
pc	puffed cheeks
gt	grinding teeth
tl	teeth on the lower lip
lp	lips protrusion
tp	tongue protrusion
om	open mouth
md	mouth corners down
mu	mouth corners up

Sign Language Acronyms

ASL	American Sign Language
Auslan	Australian Sign Language
BSL	British Sign Language
DGS	German Sign Language (Deutsche Gebärdensprache)
ISL	Israeli Sign Language
LIS	Italian Sign Language (lingua dei segni italiana)
NGT	Sign Language of the Netherlands (Nederlandse Gebarentaal)
PJM	Polish Sign Language (Polski Język Migowy)
RSL	Russian Sign Language
SZJ	Slovenian Sign Language (slovenski znakovni jezik)
SSL	Swedish Sign Language
USL	Ugandan Sign Language

List of abbreviations

ACC	accusative case
ATT	attenuative
AUG	augmentative
DEC	declarative mood
DIM	diminutive
DUR	durative aspect
END	endearment
F	feminine
M	masculine
NEG	negative
NOM	nominative case
PAR	participative
PASS	passive
PEJ	pejorative
PFV	perfective aspect
PL	plural
SG	singular
SS	singular subject

Introduction

The investigation of diminutive, augmentative, ameliorative and pejorative morphemes started with Scalise (1984), who also coined the term *evaluative morphology* to refer to the encoding of the corresponding diminutive, augmentative, endearment and pejorative features through morphological operations, mainly consisting in the addition of dedicated evaluative suffixes.

Generally speaking, evaluative features relate to the semantic primitives BIG, SMALL, GOOD, BAD (Grandi 2002) and express the objective alteration of the size of the referent (diminutive and augmentative) or its subjective evaluation (endearment and pejorative) with respect to a standard. To be more specific, diminutive and augmentative features convey a descriptive or quantitative evaluation referring to the *denotation* of the referent. On the other hand, endearment and pejorative features express a qualitative evaluation, or a judgment, with respect to the *connotation* of the referent.

The pioneer study on Italian elaborated by Scalise (1984) started a tradition of cross-linguistic researches, whose main results have been recently collected in Grandi & Körtvélyessy (2015). These studies have shown the universality of evaluative features, though their encoding is language-specific. Indeed, evaluative features can either involve dedicated morphemes, or other linguistic strategies such as tonal variations, vocalic patterns, or even syntactic constructions involving adjectives, depending on the morphological type of the language. Therefore, the domain of evaluation spans over morphology, and the linguistic operations carrying evaluative features are better defined as 'evaluative constructions' rather than 'evaluative morphology'.[1] Despite this heterogeneity, in general, evaluative constructions consist of an element encoding the evaluative feature (evaluative marker) and of another one, usually the stem or an independent word, encoding the standard referent of the evaluation.

The domain of evaluative constructions is not only complex with respect to the linguistic strategies involved to express evaluative features. It also displays a complex system of meanings combining semantic and pragmatic factors. In the most common case, evaluative markers carry the meanings of the semantic primitives, namely 'big', 'small', 'good', 'bad'. However, this is not the whole story. Evaluative markers can convey a

[1] Notice that in the literature, the domain of evaluative morphology is also defined 'expressive morphology' (Fortin 2011) or 'affective/connotative morphology' (Bauer 1997).

number of emotional overtones together with the canonical meanings of the primitives stated above. In other words, evaluative constructions constitute a very creative domain (see Dressler & Merlini Barbaresi 1994 for an overview). For instance, one single language can employ a sequence of different morphemes to convey that something is lovely and small, or it can express different emotional overtones while employing one single morpheme. Italian is a very good example: the word *casina* contains the diminutive suffix -*in(a)*, which usually denotes the small dimension of the object defined by the base, here *cas*- 'house', and conveys the meaning 'small house'. Nevertheless, in some contexts the diminutive marker can also encode the affection of the speaker toward the object of the evaluation, thus functioning as an endearment marker. In so doing, the morpheme -*in(o/a)* in Italian does not necessarily refer to a small object, but rather conveys the meaning 'lovely house' or 'lovely little house'. This is to show how the meanings and functions of evaluative markers across languages heavily depend on both semantic and socio-cultural or pragmatic factors. The majority of the literature on evaluative constructions concentrates on these aspects and investigates both language-specific alternations as well as general properties attested cross-linguistically. Investigations carried out on hundreds of spoken languages show that evaluative constructions are typologically similar across different languages. Among the studies exploring the semantic and pragmatic aspects of evaluative markers, we find some authors who claim that diminutive and augmentative features are encoded in language because the concept they convey, namely size, is bodily perceived by humans and thus it can be expressed through language (Prieto 2005).

From the issues considered so far, it is clear that evaluative constructions, despite their apparent simplicity, need to be investigated against different theoretical backgrounds in order to be completely understood. I argue that we should combine the generative, cognitive and typological tradition. I am aware of the fact that these approaches are very different to some extent, however, I think that evaluative constructions can constitute the point of encounter. Indeed, the fact that all the languages investigated so far are endowed with some elements encoding the evaluative features is evidence for the universality of evaluative features in generative terms. This innate endowment is further supported by the fact that humans are 'wired' (in cognitive terms) to encode concepts such as size, since they can perceive it. Nevertheless, this universality could not be claimed if typological studies investigating several languages didn't exist. It follows straightforwardly that only by taking into account all these perspectives, we can fully understand evaluative constructions. However, one further piece must be added to the puzzle to really gain completeness: sign languages.

Sign languages are fully-fledged natural languages developed among the Deaf[2] communities around the world. They are visuo-gestural languages conveyed through hands, body movements and facial expressions, and are visually perceived. The first studies investigating linguistic and psycholinguistic aspects of sign languages date back to the early 1960's. Since then, a still growing body of literature has developed to account for their structure and grammar, which conform to the principles of discreteness and recursiveness (Chomsky 1957; Hockett 1960) defined for spoken languages, despite the different modality employed. Therefore, a linguistic property can only really be considered universal if it holds for the languages in both modalities, spoken and visuo-gestural. Cross-modality researches have been, and still are, crucial in that they allow to confirm existing generalisations, but also to improve the knowledge of sign language-specific characteristics which distinguish them from spoken languages.

This is the reason why it is necessary to include sign languages also within typological studies exploring evaluative constructions. By investigating the display of evaluative features in sign languages we can: (i) confirm the universality of evaluative features; (ii) improve the knowledge we have of the phenomenon while adding sign-language specific strategies to encode evaluative features; (iii) confirm the assumption that some concepts are expressed in the language because they are bodily perceived, as is the case for the concept of size. Being mainly manually conveyed, sign languages can provide evidence for the embodiment of concepts through language. The general picture provided by Petitta, Di Renzo & Chiari (2015) is a first step toward the understanding of evaluative morphology in sign languages. In this dissertation, I focus on the display of evaluative features in Italian Sign Language (LIS).

LIS is the language of the Deaf community living in Italy. Linguistic investigation on LIS started in the late 1970's at the National Council of Researches (CNR) in Rome thanks to Virginia Volterra and a group of scholars including Elena Pizzuto, Elena Radutzky, Serena Corazza, among others. The pioneer researches aimed at showing that LIS was not a basic gestural system, but rather a fully-fledged natural language endowed with a specific grammar as all natural languages are (Volterra 2004). In so doing, they

[2] In this dissertation, I follow the standard convention of using capitalised 'Deaf' to refer to deaf people who use sign language in their everyday life and identify themselves as active members of a signing community.

studied the structure of LIS grammar and the processes of acquisition in a sign language. These studies initiated a long tradition of linguistic and psycholinguistic research, whose main achievement has been to recognise the linguistic status of LIS both among the Deaf and the hearing communities living in Italy. The first researches mainly investigated the syntax of LIS and its complex classifier system. As far as the morphology of LIS is concerned, there are studies concerning nominal (Pizzuto & Corazza 1996) and verbal inflection (Corazza 2000), but derivational processes are less investigated.

Therefore, the aim of my research is threefold. First, I aim at providing a detailed description of the encoding of evaluative features in LIS through the analysis of both corpus and elicited data. I will do so by considering the markers involved, the relation with the lexical adjectives corresponding to the semantic primitives, the nature of the morphological processes (sequential or simultaneous) detected, and the constraints allowing some strategies instead of others. Second, I aim at improving typological studies with the point of view of a sign language by comparing the characteristics of the evaluative strategies detected in LIS to the properties usually associated with evaluative constructions in spoken languages. Third, I will investigate the applicability of formal derivations to account for LIS evaluative constructions. The thesis is organised as follows.

Chapter 1 illustrates the three theoretical approaches of reference: Generative Linguistics, Cognitive Linguistics and Linguistic Typology. The combination of these three arguably contrasting approaches is quite innovative. Nevertheless, the chapter shows how the integration of different perspectives is gaining general consensus and it is even being encouraged. At the end of the dissertation it will be clear how the combination of Generativism, Cognitivism and Typology is necessary in order to reach a deeper understanding of evaluative constructions in LIS. After a brief discussion of the main principles encoded within each perspective, I present some studies exploring evaluative constructions in spoken languages within the generative, cognitive and typological traditions. Specifically, I consider (i) the investigations on the inflectional vs. derivational nature of evaluative morphemes; (ii) the polysemy of evaluative markers; (iii) the typological properties shared by evaluative morphemes cross-linguistically. This aims at introducing the complexity of the domain of evaluation, and at providing the necessary tools to understand both the morphophonological and syntactic analyses of LIS evaluative constructions proposed in Chapters 4 and 5, respectively.

In Chapter 2, the attention is focussed on sign languages, specifically on the main properties of the lexicon and morphophonology. First, I introduce phonological parameters and describe the phonological differences motivating the distinction between core and non-core lexicon in sign languages. I consider iconicity, a pervasive propriety of sign languages, and discuss two linguistic elements which are particularly iconic: non-manual markers and classifiers. These elements are crucial in that their formational units function as phono-morphemes in their capacity of being both meaningful and meaningless at the same time. The discussion concentrates on these elements since they are the main protagonists in LIS evaluative constructions. Successively, I describe the phonological model of reference, the Prosodic Model (Brentari 1998), which will be of primary importance to understand the phonological constraints detected in evaluative strategies in LIS discussed in Chapter 4. Finally, the main morphological processes are introduced. The chapter follows the distinction between inflectional and derivational processes, and specific attention is dedicated to the description of processes of derivation (sequential and simultaneous). The issue of evaluative morphology across sign languages is introduced by considering the study by Petitta, Di Renzo & Chiari (2015). The chapter closes with the studies investigating sign languages in a typological perspective.

Chapter 3 concerns the methodological aspects of this research study. First, I mention some challenges that researchers investigating the linguistics of sign languages face when dealing with data collection. Then, I present the kind of data I considered for the analysis: corpus and elicited. The combination of these two types is motivated by the peculiarity of the topic under investigation: evaluative features can either be very common in spontaneous conversations, or not. Therefore, eliciting data through specifically designed tests proposed to native signers has been necessary to attest the encoding of these features in LIS. The protocol for data annotation with ELAN is described in detail.

Chapter 4 focusses on the evaluative strategies detected in LIS. Specifically, in the first part, the encoding of each evaluative feature is described by distinguishing between simultaneous and sequential strategies. The constructions are then analysed in terms of their morphophonological properties. A specific phonological investigation is developed in order to identify the constraints motivating the sequential-simultaneous alternation to encode diminutive and augmentative features. Moreover, particular attention is dedicated to the morphological nature of the evaluative markers detected. The chapter also offers the analysis of Size and Shape Specifiers (SASSes) occurring in evaluative sequential constructions, whose nature and function have never been investigated in detail. I conclude the chapter by including LIS within the typological studies on evaluative morphology in spoken languages, showing that LIS respects the generalisations, despite the different modality involved.

Chapter 5 closes this dissertation by proposing a formal derivation of the evaluative structures detected in LIS. To be more specific, I consider two frameworks belonging to the Generative tradition, namely Cartography and Distributed Morphology, and I discuss their application in order to account for the strategies detected in LIS. The chapter does not intend to provide a complete answer to the issue, rather, it is quite speculative and prepares the path for future research. What it seems to suggest, though, is the fact that a non-Lexicalist approach is to be preferred when dealing with sign languages, whose nature favours simultaneity and thus makes it difficult to account for a strict order of functional projections within the nominal domain, as argued for by cartographic analyses.

Chapter 1. Investigating evaluative morphology from different perspectives

1.1 Introduction

The aim of this dissertation is to provide a description and a formal analysis of the display of evaluative features in Italian Sign Language (LIS). To this end, I will integrate three approaches which tackle evaluative morphology (henceforth: EM) in spoken languages from different perspectives.

This chapter consists of two parts: § 1.2 reflects on the importance of integrating different frameworks and provides the main features of the three approaches considered: Generative Linguistics (§ 1.2.1), Cognitive Linguistics (§ 1.2.2) and Linguistic Typology (§ 1.2.3). On the other hand, § 1.3 considers the main studies that have been developed on evaluative morphology within the generative (§ 1.3.1), cognitive (§ 1.3.2) and typological (§ 1.3.3) tradition. This chapter does not intend to provide a complete overview of the three theoretical approaches, nor to prefer one over the other. I will take into account the relevant issues of each approach and show how the integration of different perspectives allows to gain a better understanding of the phenomenon of evaluative morphology. The content of the present chapter will also provide the necessary background for the analysis of LIS evaluative strategies proposed in Chapter 4 and Chapter 5.

1.2 Integrating different approaches

The present section introduces the main assumptions on evaluative morphology held by the three approaches I will consider throughout the dissertation: Generativism, Cognitivism and Linguistic Typology. The integration of these three arguably opposite frameworks allows one to achieve a general picture of evaluative morphology.

Studies developed within the generative framework (§ 1.3.1) assume evaluative features to be universal features belonging to the genetic endowment of human beings and investigate their morphosyntactic nature; cognitive studies (§ 1.3.2) mainly investigate the complex polysemy associated with evaluative morphemes as related to pragmatic and communicative factors. Moreover, the cognitive approach assumes that concepts such as 'size' are encoded in language because they are bodily perceived.

Finally, typological studies (§ 1.3.3) describe how different languages encode evaluative features and provide generalisations by considering their properties.

The integration of the three approaches will be used to develop a systematic description and analysis of evaluative constructions in Italian Sign Language. In particular, my research aims at providing an answer to the following Research Questions (RQs):

RQ 1: Does LIS, being a visuo-gestural language, encode evaluative features? If so, which are the strategies employed to encode them?
RQ 2: Do evaluative morphemes (if any) in LIS display polysemy? Does LIS provide some evidence to the issue of embodied cognition (§1.3.2)?
RQ 3: Do the evaluative constructions detected in LIS respect the typological properties defined for spoken languages despite the different modality employed?
RQ 4: Can evaluative constructions be accounted for in formal structures?

In so doing, I join Baker & McCloskey (2007) and Holmberg (2016) in promoting a stronger collaboration between generative linguistics and linguistic typology. As a matter of fact, the integration of Typology and Generativism is not new: the formulation of the 'Principles and Parameters Theory' (Chomsky 1981) and the generalisation of the 'X-bar' format to all syntactic categories started a tradition of formal studies attempting to investigate the universals on word order formulated by Greenberg (1963) across languages, as evidence for the setting of the head-complement parameter. Among others, Cinque (1999; 2005; 2010) for spoken languages, Brunelli (2011) and Mantovan (2017) for LIS, constitute clear and successful examples of the integration of formal theories with linguistic typology. On the other hand, the integration between Cognitivism and Generativism could appear less straightforward. Cinque (2013) bridges cognition and Universal Grammar 'UG' by assuming that the fact that languages only reflect a subpart of the many cognitive concepts we have in the system of thoughts (an issue often used by Cognitivists to discredit Universal Grammar), is actually evidence for an innate organ (Universal Grammar, indeed) that is independent from historical, cultural or processing factors. Therefore, investigating which of the universal cognitive concepts are encoded in Language can improve both the knowledge of UG and of Cognitive studies.

The three approaches differ in the way they look at linguistic data: Generativism aims to understand the abstract inner structure of the language faculty, and how the computed information is mapped to sound and meaning, whereas Typology and Cognitivism, being functional approaches, are interested in the surface form of languages and how they differ, with respect to the communicative and social functions of language (Evans & Green 2009). However, the integration of these approaches may lead to a general analysis of the linguistic phenomena. Sign languages can constitute the ground on which the diverse theories could meet, by offering the opportunity to confirm or reject the generalisations based on the study of spoken languages, thus enriching our findings.

1.2.1 Generative Linguistics

Generative linguistics is the linguistic tradition adopting the theory developed by Noam Chomsky from 1957 on. Starting with *Aspects of the Theory of Syntax* (Chomsky 1965), the theory has been called 'Principle and Parameters Theory' (P&P) or 'Government-Binding Theory' (GB) in the 1980's, and 'The Minimalist Program' from 1995 on, but the basic assumptions have remained the same.

In a nutshell, the innatist theory developed by Chomsky assumes the existence of a 'generative grammar', which is "a system of rules that in some explicit and well-defined way assigns structural descriptions to sentences" (Chomsky 1965: 8). This system of rules is taken to be innate and part of the genetic endowment of the human being, and manifests through Language. The relation between the implicit knowledge of language and its manifestation is captured by Chomsky through the distinction between *competence* (or *I-language*, i.e. internalised language), defined as "the speaker-hearer's knowledge of the language", and *performance* (or *E-language*, i.e. externalised language), which is "the actual use of language in concrete situations" (Chomsky 1965: 4). In stating this, Chomsky considers Language a cognitive capacity, whose existence is independent from its use. Indeed, this is visible in acquisition and supported by the well-known 'poverty of stimulus' argument: children acquire the grammar of their language, including the most complex structures, even if they are not exposed to all the possible structures in their everyday life and environment. Therefore, there must be some kind of 'language-organ' guiding this process, known as *LAD* 'Language Acquisition Device' (Chomsky 1965). The identification of specific regions of the brain (*Broca's area 44* and *Brodmann's area 45*) specifically dedicated to language has provided further support to this assumption. The innate system of rules guiding the acquisitional process is also known as *Universal Grammar (UG)*. Generative linguistics has been interested in capturing its abstract structure and functioning in a formal theory that must also fulfil explanatory adequacy, namely it should “succeeds in selecting a descriptively adequate grammar on the basis of primary linguistic data” (Chomsky 1965: 25).

In *Lectures on Government and Binding* (1981), Chomsky formulates a solution to the conflict between the postulated innateness of the language faculty and the attested variation across languages, thus developing the ‘Principles and Parameters’ framework. He assumes that Universal Grammar is made up of both *principles*, innate rules common to all languages, and *parameters*, language-specific features that must be set through experience. Therefore, acquiring a language means setting the values of the parameters, and the process is guided by the presence of innate principles that allow humans to construct grammars. The main difference is that principles are innate, whereas parameters must be acquired. For instance, a universal principle requires that all sentences (in all languages of the world) must have a subject. Variation attested cross-linguistically, namely the fact that some languages do not always display the subject, is regulated by the so called ‘pro-drop (null-subject) parameter’, which “determines whether the subject of a clause can be suppressed” (Chomsky 1988: 64). In other words, the possibility that in some languages the subject is not phonetically realised depends on the setting of a parameter.

Hauser, Chomsky and Fitch (2002) refine the concept of the Language Faculty distinguishing between the ‘faculty of language in the narrow sense’ (FLN), and the ‘faculty of language in a broad sense’ (FLB). The FLN refers to the innate component which is responsible for the computation of language and maps it to two ‘interfaces’: the ‘sensory-motor interface’ (SM), mapping linguistic information to the phonological system, and the ‘conceptual-intentional interface’ (CI), which is responsible of semantic interpretation. In so doing, linguistic information is paired to sound and meaning. The FLN and the two interfaces all together constitute the FLB. It is important to notice that the FLN exists independently from the two interfaces, and it is considered the genetic endowment that is specific to the human being. One core property of the human language is recursion, namely the capacity of building an infinite number of sentences starting from a finite number of discrete units.

Within the P&P framework, linguistic computation was explained through the ‘Y-model’, consisting of three internal linguistic levels: deep structure (DS), responsible of lexical insertion and ‘X-bar’ constructions; surface structure (SS), where information is sent to the sound interface (PF) and transformational rules apply; and Logic Form (LF), namely the input to the mapping at the meaning interface. This is illustrated in the figure below.

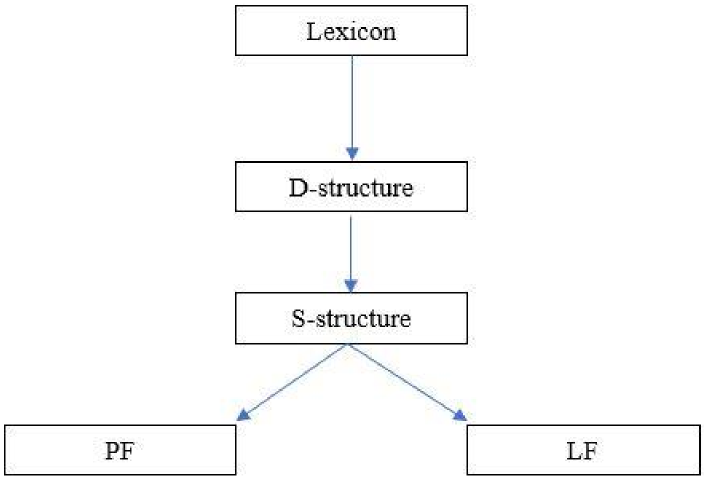


Figure 1. Y-model (adapted from Chomsky 1981: 18)

In this model, elements from the lexicon (both lexical and functional elements) enter the computation and are combined together (i.e. merged) at DS, where argument structure and thematic relations are defined in 'X-bar' constructions. Transformational operations such as 'Move-α', α being a category (Chomsky 1981), derive the surface structure, where information is sent to the sound (PF) and meaning (LF) interfaces. The X-bar structure captures the structure of phrases, which are the result of merge, and provides a unified account for all linguistic categories, both functional or lexical. 'X' is a variable that can represent nouns, verbs, complementizers, etc. and it is the 'head' of the structure (for this reason, the X-bar structure is defined endocentric, in the sense that is it constructed around a head). The head projects its category to two upper levels: X' or intermediate projection and XP or maximal projection, by optionally combining with a complement ('compl') and a specifier ('spec') respectively. This is illustrated below.

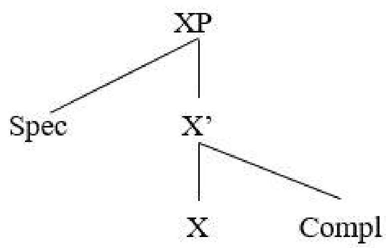


Figure 2. The X'-model (Chomsky 1981)

The P&P model, together with the X'-theory, were later simplified in order to account for a more economical and efficient computation of linguistic information. This was the starting point of the Minimalist Program[3] (MP), (Chomsky 1995; 2001; 2004; 2005). The assumption that Language is a faculty of the mind specific of human beings is retained. Its initial state (S_0) is genetically determined (Universal Grammar) with all the parameters set with unmarked values. Parameters-setting leads to variation, namely to the different instances of S_0. In other words, the different languages of the world (I-languages) are the mapping of primary linguistic data (PLD), or experience, with respect to the options allowed by S_0. The third factor involved in determining I-languages is constituted of principles of the organic system, which are not specific of the language faculty: data processing, structural architecture and computational efficiency (Chomsky 2004; 2005). The focus of the MP has shifted to the investigation of computational efficiency, in order to determine what is necessary for "language to be usable at all" (Chomsky 2001: 1). The crucial requirement is that the information produced by language is 'legible' (i.e. accessible) to the other cognitive systems involved, the SM and CI systems, which map information to the two interfaces, PF and LF respectively. In so doing, the components have been reduced to three, lexicon (technically called 'numeration'), PF and LF, and the transformational operations to two, namely 'Merge' and 'Move'.

The computation starts with the selection of the lexical items (paired with an index indicating the number of instances they are available for the computation) of the numeration (N) through an operation called 'Select'. The Language system consists of three components: the narrow syntax (NS), mapping lexical items to the derivation, the phonological component (Φ), mapping the derivation to PF, and the semantic component (Σ), which maps the derivation to LF. The derivation is determined by the 'Inclusiveness Condition' (Chomsky 1995: 228), which prevents new elements to enter the derivation. The three components are cyclic. NS makes use of 'Merge', an elementary structure-building operation which combines two elements into a new syntactic object, whose label matches the label of the head. This simple mechanism ensures that we have "an unbounded system of hierarchically structured expressions" (Chomsky 2005: 11), without

[3] This section only constitutes a brief overview of the program by providing the principal tools to understand the model I develop in Chapter 5. This section does not do justice to the amplitude of the program and its implications. For further information, the reader is referred to Chomsky (1995; 2001; 2004; 2005) and Hornstein (2005) among others.

the need to assume two further levels of analysis (namely DS and SS). This has also led to the elimination of bar-levels, leading to the construction of bare phrase structures (Chomsky 1995). It is important to distinguish between *external merge*, the operation of assembling constituents, and *internal merge* (also called 'Move'), responsible for displacement and edge properties (e.g. topic, focus, etc.). The syntactic object called 'phase' (Chomsky 2000; 2001) is then sent to the interfaces, through the operation called 'Transfer'. Particularly, the transfer to the sound interface PF is referred as 'Spell-out'. Therefore, the model in Figure 1 becomes the following, known as 'T-model'.

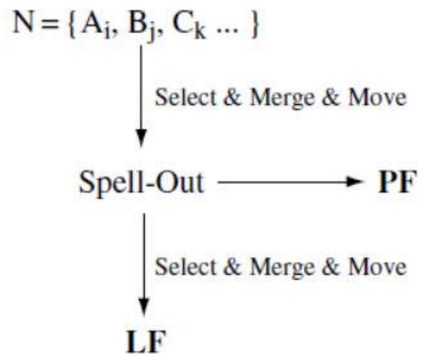


Figure 3. T-model in Minimalism grammar (Hornstein 2005: 73)

As far as lexical items are concerned, it is assumed that they are formed of sets of phonological, semantic and syntactic features, which have different properties with respect to the interfaces. For instance, phonological features are readable at PF but not at LF, therefore they are [-interpretable], namely uninterpretable, whereas semantic features are visible at LF but not at PF, thus they are [+interpretable]. Uninterpretable features must be checked before LF, otherwise the derivation crashes. Uninterpretable features require to be in a proper structural relation in order to be deleted. This happens through the operation 'Agree', which relates a 'probe' (the head with uninterpretable feature) to a 'goal', the element providing the relevant features. Notice that the probe-goal relation must be local, and that uninterpretable features, once valued, must be sent to PF before being deleted. When the derivation satisfies both the PF and LF interfaces, it is said to converge.

1.2.2 Cognitive Linguistics

The cognitive approach to language developed in the 1970s, mostly as an opposition to the Generative approach elaborated in the same years (Evans & Green 2009). The principal difference between Cognitive linguistic and Generativism is that in Cognitivism, language is not considered an autonomous (though innate) cognitive faculty, separated from other non-linguistic cognitive abilities (Croft & Cruse 2004). Rather, in the cognitive perspective language results from the interplay of several cognitive functions, and thus it reflects the organisation of thoughts and ideas. These are encoded in the language through symbols (parts of words, words or string of words) that consist of a form and are paired with a meaning. In turn, meaning is associated with a concept, which is a particular mental representation of something perceived from the world (Evans & Green 2009). By considering language as a tool for communication, linguists working within this framework are interested in how language encodes concepts in relation to other factors such as our perception of the world or sociocultural experience. Therefore, they explain how language works through the observation of linguistic patterns.

One of its concerns is to investigate the form-meaning relation with reference to the context of use. One assumption is that concepts are grouped into categories of members, which share more or less the same properties and are derived from a central one. Generally speaking, lexical items (i.e. words) are considered conceptual categories, thus they encode different, yet related meanings. This is exemplified below through the studies investigating polysemy of evaluative morphemes (§ 1.3.2). Indeed, polysemy refers to the different meanings displayed by a single linguistic unit. Cognitive linguistics is interested in polysemy because it is considered "[…] as a key generalisation across a range of 'distinct phenomena', and […] polysemy reveals important fundamental commonalities between lexical, morphological and syntactic organisation." (Evans & Green 2009: 36). The different meanings and extensions are derived and linked to one central concept. Lakoff (1987) has introduced the 'radial-category model' in order to account for these connections. The radial category is the structured representation of all the meanings: it consists of a central prototype sense (or concept) around which all the conceptual extensions are built through metaphors, inferences and abstractions. It is important to notice that these conceptual categories, namely structures of distinct meanings, are what is stored in the mental lexicon (also called semantic memory) in Cognitivism.

One further tenant of Cognitivism is the importance given to the human experience: language reflects the relation between concepts and the perception we have of reality, thanks to the nature of our body ('embodied experience'). What can be experienced, can also be expressed through language. Language, then, appears to be constrained by our sensory experience and perception of the world. The relations among experience, the conceptual system and the semantic structure of language are investigated by the branch of cognitive semantics. Working within this framework, Prieto (2005; 2015) accounts for the polysemy of diminutives and augmentatives considering that the notions of 'littleness' and 'bigness' they convey are bodily bounded, since they relate to size which is a property that we can visually perceive (§ 1.3.2). The issue of embodied cognition is in some way made visible in sign languages, in particular with size and shape specifiers (Lu & Goldin-Meadow 2018). We will discuss this possibility in Chapter 4.

1.2.3 Linguistic Typology

The third approach I will consider is Linguistic Typology. Generally speaking, Linguistic Typology concerns the classification of languages according to specific structural properties. If different languages display the same property, they belong to the same linguistic type. Croft (2002) identifies three main directions of typological studies, which basically correspond to three definitions of Linguistic Typology (Croft 2002: 1-2):

i. Typology as typological classification. Investigations aim at classifying languages into types, according to the structural properties they share in a specific domain of the grammar (morphology, syntax, etc.). They rely on large cross-linguistic comparisons in order to develop descriptive taxonomies based on empirical observations. This kind of investigation led to the definition of morphological types (§ 1.2.3.1).
ii. Typology as typological generalisation. This definition of linguistic typology refers to its main concern of searching for the recurring patterns across languages, in order to account for language universals and variations. The first to develop this approach, and to start the tradition of modern linguistic typology, was Joseph Greenberg in 1960, who introduced the notion of 'implicational universals' while investigating morphology and word order cross-linguistically (Greenberg 1963). Greenberg's approach differs from typological classification in that he does not

only describe recurrent patterns, but he also considers these patterns to make predictions about other possible structures in human languages, thus formulating generalisations over observations.

iii. Functional typology. This definition refers to the theoretical framework within which typological studies are developed. This is usually taken to be the opposite of generative approaches, since it seeks to provide explanations starting from observed patterns of language use, instead of the other way around.

The integration of these three approaches defines the process of empirical scientific analysis (Croft 2002), whose results are important for the diachronic study of language as well. Typological studies must consider large samples of languages (representing the linguistic families of the world languages) in order to define universals, which must be statistically valid (Evans & Green 2009). Typological universals are defined as properties that are common to all languages, but we must distinguish between implicational universals (i.e. constrained) and unrestricted universals. Unrestricted universals are properties that all languages possess (for instance, duality of patterning), whereas implicational universals capture patterns in language variation by stating that “If a language X has property Y, then it will also have property Z” (Evans & Green 2009: 58). Universals of this kind have been stated for evaluative morphemes and will be presented in § 1.3.3.

It is evident that the cross-linguistic analysis developed by Greenberg (1963) has led to a fruitful discipline which has uncovered many properties of different and unrelated languages. These results are collected in the World Atlas of Linguistic Structures (WALS), a database (Dryer & Haspelmath 2013) which contains data about 2679 languages at the time of writing.

1.2.3.1 Morphological typology

One of the first typological studies developed since the advent of modern typology concerns the kind of morphology that languages display (see Brown (2010) and Graffi (2010) for an overview). Specifically, languages can be grouped into types depending on the formal processes they employ and the number of concepts they convey per word (‘synthesis’, (Sapir 1921)). The index of synthesis allows to classify languages on a scale spanning from ‘analytic’ to ‘synthetic’ (Haspelmath & Sims 2010). It is worth noting that we are dealing with a continuum because often languages display properties belonging to different morphological types.

At the analytic end of the scale we find *isolating* languages, in which every word consists of only one morpheme. Therefore, these languages only have free morphemes. A typical example of this morphological type is Mandarin Chinese, illustrated in the example below.

(1) *Wǒ shuì le sǎn ge zhōngtou* (Mandarin Chinese)
I sleep PFV three CL hour
'I slept for three hours.' (Li & Thompson 1981: 22))

On the other hand, synthetic languages allow affixation, thus displaying the possibility of having bound morphemes. Usually, synthetic languages are divided into *agglutinative* and *fusional*.

When a language displays long words composed of several but identifiable and segmentable morphemes, it is called *agglutinative*. Typical examples are Turkish and Hungarian. In (2) below, we see that Hungarian has two different morphemes for the plural and accusative, '-ak' and '-at' respectively, which are sequentially added to the root, here *ház* 'house'.

(2) *Ház-ak-at* (Hungarian)
house-PL-ACC
'Houses' (Aronoff & Fudeman 2011: 179)

Conversely, when morphemes convey more than one meaning simultaneously and cannot be segmented, the language belongs to the *fusional* type. Latin is a typical fusional language: as shown in (3), the suffix '-us' in *dominus* 'lord' conveys both the singular number feature and the nominative case.

(3) *Domin-us* (Latin)
lord-SG.NOM
'Lord' (Aronoff & Fudeman 2011: 179)

A further type is the case of *polysynthetic* languages. This morphological type offers the possibility to incorporate affixes but also lexical elements into a single word.

(4) *Uqalimaarvi-ralaa-qaq-tugut* (Inuit)
library-small-have-DEC.1PL
'We have a small library.' (Compton 2012: 10)

The morphological type can influence other properties of the language. For instance, there seems to be a correlation between the morphological type and a rich encoding of evaluative features (§ 1.3.3).

1.3 Working in the frameworks

The following sections offer an overview of the main studies tackling the issue of evaluative morphology in spoken languages.

EM belongs to the domain of evaluation and refers to the set of morphological operations employed to encode the semantic primitives typically associated with evaluative features: SMALL/BIG for the objective features diminutive 'DIM' and augmentative 'AUG'; GOOD/BAD for the subjective features endearment 'END' and pejorative 'PEJ' (Wierzbicka 1989; Grandi 2002). It is worth noting that the domain of evaluation in general, and of evaluative morphology in particular, is more extended than it seems, expanding from morphology to syntax, from semantics to pragmatics. Specifically, other types of operations (for instance phonological or syntactic) are employed to convey evaluation, and each evaluative value can convey a number of different meanings depending on the context of use.

In the following, in order to account for the state of the art and the complexity of this domain, I provide an overview of the studies which constitute the starting point for investigations on evaluative morphology. Each section is devoted to a different analysis of evaluative morphemes developed within one of the three theoretical approaches introduced above: (i) Scalise's (1984) study on evaluative suffixes is developed within the generative framework. This analysis has been among the first trying to find a place for EM within the inflection-derivation continuum. (ii) The cognitive framework is exemplified through the investigations realised by Dressler & Merlini Barbaresi (1994), Jurafsky (1996), Prieto (2005; 2015) and Körtvélyessy (2015), who examine the complex polysemy of evaluative morphemes. (iii) Finally, the perspective shifts towards linguistic typology with the most recent analyses illustrating the display of evaluative morphology cross-linguistically developed by Štekauer (2015) and Grandi (2002; 2017a; 2018). While considering the display of evaluative morphology across languages, these studies provide objective criteria for the definition and identification of evaluative constructions, which will be relevant for the analysis of evaluative constructions in Italian Sign Language in the following chapters.

1.3.1 Evaluative morphology between inflection and derivation

The term *evaluative morphology* was introduced by Scalise (1984), who provides the first attempt to classify evaluative morphology as belonging to the domain of inflection or derivation. Specifically, he identifies the following properties associated with evaluative suffixes in Italian (Scalise 1984: 132-133):

i. they change the semantics of the base (for instance, *lume>lumino* ‘lamp>little lamp’);
ii. they allow the consecutive application of more than one rule of the same type, and at every application the result is an existent word (for instance, *fuoco>fuocherello>fuocherellino* ‘fire>little fire>nice little fire’);
iii. they are always external with respect to other derivational suffixes and internal with respect to inflectional morphemes;
iv. they allow, although to a limited extent, repeated application of the same rule on adjacent cycles (e.g. *car-in-ino* ‘nice-DIM-DIM’);
v. they do not change the syntactic category of the base they are attached to;
vi. they do not change the syntactic features of the base (for instance, *idea* [abstract]>*ideuzza* [abstract] ‘idea>little idea’).

Considering the properties listed above, Scalise (1984) concludes that evaluative suffixes in Italian belong neither to the domain of derivational morphology, nor to the one of inflection. Therefore, he proposes the existence of a separate block of rules for the formation of evaluatives (evaluative rules, i.e. ER’s), between word-formation rules (WFR’s, namely, derivational rules) and inflectional rules (IR’s), as shown in Figure 4 below.

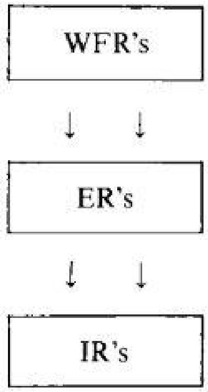


Figure 4. Scalise (1984: 133): Place of EM within morphological rules

Scalise's (1984) analysis has been greatly influential and has started a lively tradition of research on evaluation. However, his results have been challenged by several authors (a.o. Stump 1993; Bauer 1997; Fortin 2011), who argue that the properties detected hold only for Italian and cannot be generalised.[4]

Considering the difficulty of establishing whether evaluative morphology is a derivational or inflectional phenomenon, researchers have mainly focussed on the relations of evaluative morphemes with semantics and pragmatics. The main analyses are illustrated in the next section.

1.3.2 Meanings and functions of evaluative affixes

Among the first studies considering the meaning and function of evaluatives, we find the one developed by Dressler and Merlini Barbaresi in 1994. This study is the first to mention the importance of pragmatics to understand the morphological nature of evaluatives. The authors show that diminutive and augmentative morphemes can be analysed from different perspectives: (i) morphosemantic, which considers the function of morphemes denoting dimension; and (ii) morphopragmatic, which focusses on the meanings conveyed by diminutives and augmentatives when used in specific pragmatic contexts such as speech situations or interactions. In so doing, Dressler & Merlini Barbaresi (1994) introduce the theoretical model of *morphopragmatics*, defined as the "[…] area of the general pragmatic meanings of morphological rules […]" (Dressler & Merlini Barbaresi 1994: 55). They consider the use of diminutives and augmentatives in

[4] Other formal studies concerning evaluative morphemes will be considered in Chapter 5.

Italian, German and English to show that often diminutives and augmentatives do not only convey the basic semantic meanings 'big' and 'small', but also more various and complex meanings related to the context of use. Indeed, evaluatives can be used to convey attenuation/intensification, irony, sarcasm, playfulness and emotion/tenderness because they all share the pragmatic feature [fictive] (Dressler & Merlini Barbaresi 1994: 440). For instance, in (5) below the diminutive is used to attenuate the negative stance of the prohibition directed at the child, and not to denote the size of the notebooks.

(5) *Non lasciare in giro i tuoi quadern-in-i*! (Italian)
not leave around the yours notebook-DIM-M.PL
'Now, don't go leaving your notebooks around!'
(Dressler & Merlini Barbaresi 1994: 185)

In this perspective, pragmatics is seen as independent from semantics. The authors provide a thorough description of several pragmatic functions associated with diminutives and augmentatives, and identify the feature [non-serious] as the core concept of the majority of diminutives, which can also characterise some augmentatives and pejoratives. According to the authors, the process of evaluation configures as the speaker's expression of a judgement, in relation to its attitude towards the object of the discourse and the social context of use. Crucial in this process is the interlocutor's interpretation of the evaluation, otherwise pragmatic meanings cannot be activated.

A similar study, which has been crucial for the development of investigations on the semantics and pragmatics of evaluatives, is Jurafsky (1996). The author considers the polysemy of diminutives in over 60 languages providing a unified structure for their numerous senses. Specifically, he shows that the several meanings attested detach from the original source domain of size, but they are ordered and derived in a predictable way. He builds on the radial category model of semantics developed by Lakoff (1987) and provides a model in which the different meanings are all structured around a central category, i.e. CHILD.

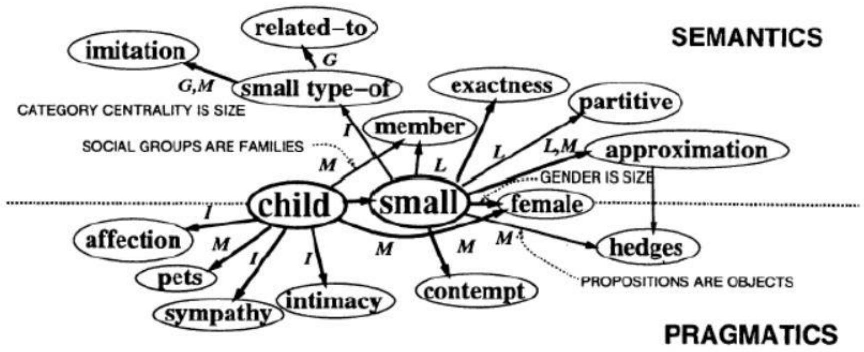


Figure 5. Jurafsky (1996: 542): universal structure for the semantics of diminutive

According to this model, the origin of diminutive in languages is rooted in the semantics of 'child', from which the other senses (i.e. concepts) are derived. For the author, this model holds both synchronically and diachronically. The extensions of the concept 'child' are derived though several processes:

i. **Metaphors (M).** The semantics of diminutives and augmentatives is often related to metaphors for gender, and metaphors of centrality and marginality.
    a. *Metaphors for gender*. Cross-linguistically, a recurrent association is attested between female gender and diminutives or augmentatives. While the association between feminine and augmentative seems to be historically related, the connection with diminutives seems to be both pragmatic and semantic;
    b. *Metaphors of centrality and marginality*. Diminutives can simultaneously convey intensification and attenuation, or they can mark both the social centrality or marginality of someone. This apparent paradox is resolved thanks to the radial category, which allows to represent the different metaphorical links through senses.

ii. **Conventionalisation of inference (I).** Diminutive morphemes can undergo semantic shifts through the inference of associations. Specifically, diminution is often associated with affection, or to prototype exemplars of small objects. These associations can become conventional over time, thus resulting in lexicalised or grammaticalised form. Consider, for instance, the French word *ciboulette* 'scallion'. This is the prototype example of a small *ciboule* 'onion', but the derived word is a construction root-DIM which has lexicalised and lost the original compositional meaning (Jurafsky 1996: 552). As a consequence, it has lexicalised in 'scallion'.

iii. **Generalisation or bleaching (G)**. Diminutive morphemes can acquire more abstract and less specific meanings, thus displaying the possibility of being employed in a wider range of contexts. For instance, the English suffix *–ish* in *Finnish* or *childish* (Jurafsky: 1996: 553) has completely detached from the original source domain of size through a process of abstraction which has led to acquire the meaning 'related to' rather than conveying attenuation or smallness.

iv. **Lambda-Abstraction-Specification (L)**. This process refers to a new mechanism of semantic change. It is proposed to account for the approximation and weakening resulting when a diminutive suffix attaches to a gradable adjective or verb. The approximation is a second-order predicate in that it approximates a predicate. For instance, approximation applies to predicates like 'red' thus resulting in 'red(x)'. The meaning of a construction like 'red-DIM' would, then, be 'low on a scale of redness' (Jurafsky 1996: 554), but this would not account for the exact meaning associated with *reddish* in English. Therefore, Jurafsky (1996: 555) proposes the following definition for the semantic of approximation:

'dim (*point x, scale y*) = lower than x on y'.

The process of 'lambda-abstracting' "[…] takes one predicate in a form and replaces it with a variable. The resulting expression is now a second-order predicate, since its domain includes a variable which ranges over predicates. For the diminutive, this process takes the original concept 'small(*x*)', which has the meaning 'smaller than the prototypical exemplar *x* on the scale of size', and lambda-abstracting it to 'lambda(*y*) (smaller than the prototypical exemplar *x* on a scale *y*)'" (Jurafsky 1996: 555). This process is employed when neither metaphors nor inferences are enough to derive the semantic change of certain constructions.

Prieto (2005; 2015) builds on Jurafsky's (1996) model but considers the concept of SIZE as a starting point for the structured polysemy of evaluatives in Spanish (instead of CHILD). Working within the framework of cognitive semantics, he considers that language encodes bodily-perceived concepts. Indeed, size is a property that belongs to all entities in the real world and it is used to categorise the world very early in life (it seems that children aged four or five months already have a sense of the size of objects (Prieto

2015 and reference cited within). In this perspective, size is a semantic primitive because "humans are wired to perceive size" (Prieto 2015: 22), and the primitive meanings of evaluatives are 'big' and 'small'. Being perceived as conceptual categories (§ 1.2.2) rather than referents, evaluatives have a conceptual structure which starts with the primitives 'big' and 'small' and extends to other concepts such as affection or importance. In this way, the other functions of amelioratives and pejoratives are derived by extension. By applying the radial category model (Lakoff 1987), he accounts for the relations between the core sense of diminutives (namely, 'littleness') and augmentatives (namely 'bigness') with the other derived senses attested in the Spanish-speaking community considered (affection, pejoration, intensification, euphemism, etc.). In so doing, he is able to account for those instances of euphemistic, ironic or commiserating functions (Prieto 2005: 74).

Starting from the core senses of 'littleness' and 'bigness' for diminutives and augmentatives respectively, the other semantic and pragmatic functions of evaluatives emerge as in Jurafsky (1996) through metaphorical, metonymical and inferential extensions. The two models are provided below.

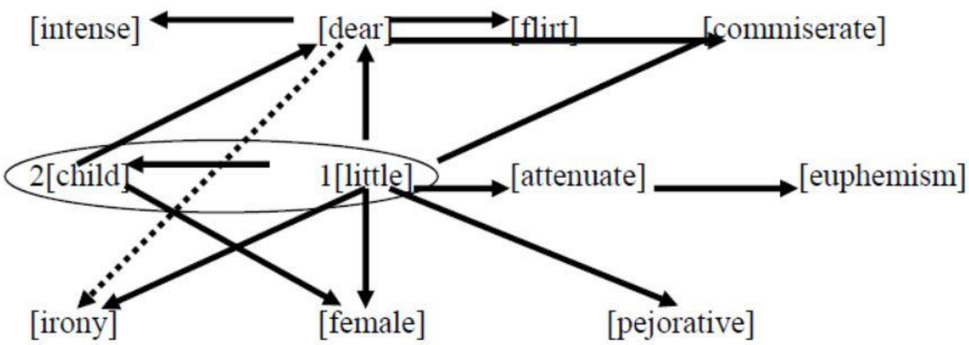


Figure 6. Radial model for diminutives (Prieto 2005: 89)

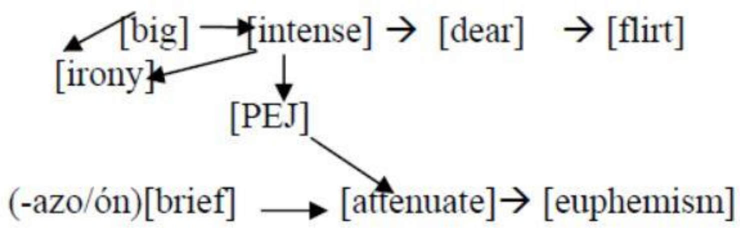


Figure 7. Radial model for augmentatives (Prieto 2005: 95)

In this perspective, the perception of size leads to the processing of more abstract concepts such as endearment and other connotations related to size. As such, the quantitative semantics of the primitive notions encoded in diminutives and augmentatives, namely 'small' and 'big', extend to more qualitative abstract concepts.

A further study I mention is the semantic model proposed by Körtvélyessy (2015), which adopts the same framework of cognitive semantics and the idea that evaluative meanings are constructed at the conceptual level. According to the author, evaluative morphology reflects the capacity of languages "to express the semantics of less than/more than the default quantity" (Körtvélyessy 2015: 41). The 'default' is specific of a linguistic-community and it is defined according to several factors: language, culture, traditions, shared knowledge. The meaning conveyed by evaluatives can be the expression of different cognitive categories: substance, action, quality and circumstance. I provide an example for each category below (Körtvélyessy 2015: 42-44).

(6) *Star-let* (English)
star-DIM
'Little star'

(7) *Tre-muda* (Provencal)
AUG-change
'Change a lot'

(8) *Küg-elcem* (Tatar)
blue-ATT
'Blueish'

(9) *Ben-in-o* (Italian)
well-DIM-M.SG
'Quite well'

In this model, the starting point for the process of evaluation is the need of a member of a speech-community to evaluate an object of the extra-linguistic reality, and the evaluation can be quantitative or qualitative. Consequently, the cognitive categories listed above are encoded at the language-level through diminutive, augmentative, ameliorative, pejorative, attenuative, etc. markers. At this point, the meaning of the evaluative marker can slightly shift if used in specific pragmatic contexts. Körtvélyessy (2015) differs from both Jurafsky (1996) and Prieto (2005; 2015) in providing a model that (i) accounts for several evaluative markers (conversely, Jurafsky (1996) mainly considers diminutives), and (ii) is valid for both diminutives and augmentatives, avoiding the necessity to create two separate derivations as in Prieto (2005). In other words, the author considers diminutives and augmentatives as deviations from the standard value in any of the cognitive categories listed above, thus providing a unified model for the polysemy of evaluatives in general.

In the next section I consider cross-linguistic analyses investigating how languages encode evaluative features and the properties displayed by evaluative morphemes.

1.3.3 Typological properties of evaluative morphemes

Grandi (2002; 2017; 2018) tackles evaluative morphology from a typological perspective, investigating how it is displayed in more than 50 languages (Grandi & Körtvélyessy 2015; Grandi 2018). Before proceeding with the cross-linguistic analysis and comparison of properties, he delineates objective criteria for the definition of evaluative constructions (Grandi 2002). In fact, previous studies referred to evaluative constructions without providing clear definitions of what they were investigating (Grandi & Körtvélyessy 2015).

First, Grandi (2002) considers the semantic functions usually associated with evaluative markers (diminution, augmentation, attenuation, intensification, contempt, endearment, authenticity/prototypicality) and divides them into two groups, according to the kind of evaluation they convey (Grandi 2002: 31). He introduces the categories of 'quantitative evaluation' and 'qualitative evaluation':

i. *quantitative/descriptive evaluation*: diminution, augmentation;
ii. *qualitative evaluation*: attenuation/approximation, intensification, endearment, contempt, prototypicality.

According to the author, both quantitative and qualitative processes convey a deviation from the standard value, which is culture/language-specific as in Körtvélyessy (2015).

Quantitative processes evaluate the referent (be it an object, a person, an action, etc.) according to its objective properties (dimension, shape), whereas qualitative processes convey more subjective judgments, namely they encode the speaker's feelings and attitude towards the object of the evaluation. Grandi (2002; 2017; 2018) conceives the process of evaluation as a semantic scale with two opposite poles: positive and negative. Evaluation conveys a deviation from the standard, and this deviation can be towards the positive end of the scale or towards the negative one (the standard being the zero of the scale). The opposite poles refer to the increase or decrease of a property or feeling. In so doing, both quantitative and qualitative functions are accounted for.

Evaluative markers (both qualitative and quantitative) express a shift towards the positive end when conveying an increase of a property (for instance, dimension) or the positive feeling of the speaker towards the object. On the other hand, they encode a shift towards the negative end when they convey a decrease of a property, or the negative attitude of the speaker towards the object of the evaluation. This is illustrated in the table below.

	Quantitative/descriptive perspective	**Qualitative perspective**
Shift towards the positive end	• augmentation	• intensification • endearment • prototypicality
Shift towards the negative end	• diminution	• attenuation/approximation • contempt

Table 1. Evaluative processes within the semantic scale (Grandi 2017: 7)

In order to provide a more general and abstract model, Grandi (2002) follows Wierzbicka (1989a: 108) in assuming that all of the world's languages are endowed with linguistic elements such as morphemes or words, encoding the concepts of BIG/SMALL and GOOD/BAD. These semantic primitives are representative of the quantitative and qualitative side of evaluation, respectively. In so doing, the table above becomes:

	Quantitative/descriptive perspective	**Qualitative perspective**
Shift towards the positive end	BIG	GOOD
Shift towards the negative end	SMALL	BAD

Table 2. Semantic primitives representing quantitative and qualitative evaluation (Grandi 2017: 7)

The model in the table above allows to define the prototypical function of each evaluative marker (Grandi & Körtvélyessy 2015: 12):

i. prototypical diminutives encode a shift towards the negative end on the descriptive axis;
ii. prototypical augmentatives indicate a shift towards the positive end on the descriptive axis;
iii. prototypical pejoratives indicate a shift towards the negative end on the qualitative axis;
iv. prototypical amelioratives[5] denote a shift towards the positive end on the qualitative axis.

Nonetheless, it is well known that evaluatives can combine different semantic values. For instance, the diminutive marker '-in(o)' in the Italian word *gattino* ('kitten', Grandi 2017: 7) encodes both the diminutive and endearment value. Therefore, Grandi (2002) proposes the following schema to account for the polysemy usually conveyed by evaluative markers cross-linguistically. The arrows indicate which primitives can combine.

[5] Linguistic elements encoding the semantic primitive GOOD, thus conveying the semantic function of endearment, belonging to the qualitative side in Table 1 above.

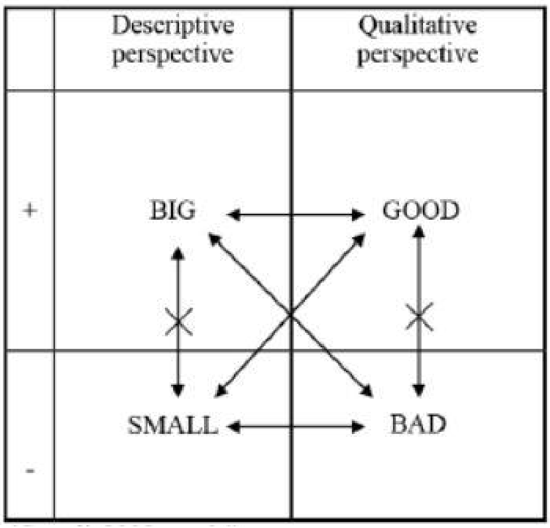


Figure 8. Polysemy of evaluative markers according to Grandi (2002: 34)

Having defined the properties of the prototypical evaluative markers (namely diminutives, augmentatives, amelioratives, pejoratives), it is now possible to provide a clear definition of evaluative constructions. Specifically, Grandi (2002: 52) claims that a construction can be defined as evaluative if it satisfies two conditions:

i. *semantic*: the construction must display the function of assigning a value, different from the standard within the semantic scale, to a concept without resorting to any parameter of reference external to the concept itself (Grandi 2017: 8);
ii. *formal*: the construction must include the explicit expression of the standard, namely a lexically autonomous linguistic form recognised by the speaking-community as a real word, and the evaluative marker, namely a linguistic element expressing at least one of the semantic primitives BIG, SMALL, GOOD, BAD.

In this way, we are able to exclude ambiguous instances which seem to be evaluatives because they include an evaluative morpheme, but that are instead lexicalised or encode other kinds of derivations. For instance, the Italian word *imbianchino* (‘house painter’) is composed by a root *imbianch-* and a suffix, *-in(o)*, thus respecting the formal condition above. However, the suffix ‘-in(o)’ in this example, despite being homophonous to the Italian diminutive suffix ‘-ino’, does not convey a value different from the standard one, therefore this is not an instance of evaluative construction.

Once that the evaluatives are defined, cross-linguistic analyses investigating how languages encodes the semantic primitives can be developed. Among these, we mention Štekauer (2015) and Grandi (2018), which offer very interesting insights.

Štekauer (2015) investigates the processes employed to convey evaluative features in more than 200 languages of the world. Some languages convey diminution through a change of gender, or through classifiers. In the example below, the classifier -*di* means 'seed/grain', and it is used to form the diminutive:

(10) *Awaro-di* (Movima)
parrot-DIM
'Little parrot' (Štekauer 2015: 46)

Other languages can derive evaluatives through tonal or phonological modifications. In the example below, we see that the diminutive in Moseten is conveyed by changing a stem vowel and/or through its nasalisation:

(11) *Tipi* > *Täepäe* (Moseten)
'Piece > little piece' (Štekauer 2015: 46)

Despite the various type of word formation processes that languages employ to encode evaluative features, affixation seems to be the most common one. Particularly, suffixation occurs in the vast majority of languages. However, we also find some instances of prefixation, as in (12), reduplication (13) and compounding (14).

(12) *Mòr-chuairt* (Scottish Gaelic)
big-trip
'Excursion' (Štekauer 2015: 48)

(13) *Iłin~iłin* (Komi)
far-redup.
'Very far' (Štekauer 2015: 49)

(14) *Anak-ayam* (Bahasa Indonesia)
child-hen

‘Chicken’ (Štekauer 2015: 51)

In (14) the diminutive is realised through compounding of the word *anak* ‘child’ with the word for the animal considered.

In some languages, the presence of the diminutive morpheme leads to phonological modifications of the stem (Gregová 2013). For instance, the diminutive suffix ‘-chen’ in German triggers umlaut on the stem it combines with, namely the fronting of back stem vowels, typically on the final full non-schwa vowel. I provide an example from Ott (2011: 27) below.

(15) *Turm* > *Türm-chen* (/u/ → /y/)
tower > tower-DIM

The cross-linguistic analysis conducted by Grandi (2018) considers a sample of 55 world-languages. Results show that evaluative morphology is more common in the languages of Eurasia and South/North America, as also found by Körtvélyessy (2015) and Štekauer (2015). Languages differ with respect to which of the semantic values included within the evaluatives category (cf. Table 1) they encode: none of the sample languages seems to express all the seven values with a dedicated morpheme. Interestingly, though, Inuktitut and Catalan express 6 values out of 7. Among the values, the most frequent ones are diminutives and augmentatives. Considering the instances detected, Grandi (2018) formulates some implicational correlations holding cross-linguistically:

i. augmentative implies diminutive: if a language displays augmentatives, it surely is endowed with diminutives as well;
ii. pejorative implies diminutive;
iii. endearment implies diminutive;
iv. qualitative evaluation implies quantitative evaluation;
v. the richness of evaluative morphology seems to be related to the fusional type.

As for the formal strategy employed to encode evaluative features, Grandi (2018) claims that it cannot be stated that suffixation is the preferred strategy, rather it seems that languages display a ‘prefix-suffix neutrality’. Indeed, many languages can employ both prefixes and suffixes to express the same evaluative function, as shown in (16) for Italian.

(16) *Appartament-o > appartament-in-o / mini-appartament-o*

flat-M.SG > flat-DIM-M.SG / DIM-flat-M.SG

'Small flat'

Some generalisations can also be drawn considering the morphosyntactic properties displayed by evaluative morphemes (Grandi 2017):

i. evaluative affixes can attach to words belonging to different syntactic categories;
ii. they usually do not change the syntactic category of the base-word;
iii. the occurrence of evaluative affixes is constrained by some sorts of restrictions. For instance, evaluatives are rarely formed from abstract or mass nouns, thus a semantic constraint is at play. In the same vein, phonological constraints are detected as well: Italian evaluative suffixes tend to avoid words whose final syllable sounds like the suffix (e.g. **lett-etto* vs. *lett-ino* 'small bed' Grandi 2017: 9);
iv. evaluative affixes can interact (i) on the syntagmatic layer, therefore sequences of multiple evaluative affixes can be produced; (ii) on the paradigmatic level, which means that different evaluative morphemes with the same meaning can attach to the same base word. These are instances of suppletion;
v. in the majority of languages, evaluative affixes are not relevant to syntax in that: (i) they do not trigger agreement; (ii) they are not required by any syntactic context;
vi. the meaning of evaluative affixes is usually not referential, which means that the base word and the derived word have the same referent;
vii. evaluative affixes perform a modification function.

Among all the properties listed above, the one that has influenced many authors in claiming that evaluative morphology is derivational in nature is the fifth. It is true that evaluative morphology is mostly derivational, but there are some exceptions, like Bantu languages, in which EM is inflectional. In this language, the presence of an evaluative affix triggers agreement of the other elements of the sentence, as we can see in example (17) below.

(17) *Ka-mundu ka-ria ka-nini* (Kikuyu)

DIM-person DIM-that DIM-little

'That little person' (Stump 1993: 9)

1.4 Conclusions

The present chapter has introduced the three theoretical frameworks of reference and the main studies investigating evaluative morphology in spoken languages from different perspectives. The integration of three apparently opposing approaches, namely Generativism, Cognitivism and Linguistic Typology, has proven to be a necessary condition to have a complete grasp on the complex phenomenon of evaluative constructions.

In the course of the dissertation, it will also become clear how this integration is needed to analyse evaluative strategies in LIS. Moreover, investigating whether and how LIS encodes the semantic primitives SMALL, BIG, GOOD and BAD, which constitute the prototypical concepts underneath diminutive, augmentative, ameliorative and pejorative morphemes, will allow us to verify and improve both formal and functional studies that have been developed solely on the basis of spoken languages.

Chapter 2. Morphophonological aspects of sign languages

2.1 Introduction

Sign languages (henceforth: SLs) are fully-fledged natural languages, displaying the same grammatical properties attested in spoken languages despite being conveyed through manual and non-manual articulators, and visually perceived. The different modality employed constitutes the richness of sign languages, since it allows to encode concepts simultaneously and visually. Even though SLs do have some gestural components, they are very different from gestural systems (see Goldin-Meadow & Brentari 2017 for discussion). It has long been recognised that sign languages are governed by the very same cerebral regions devoted to the mastering of language in spoken languages, namely Broca's Area and Wernicke's Area (Poizner, Klima & Bellugi 1987), and psycholinguistic studies show that Deaf children follow the same stages of acquisition attested in hearing children acquiring a spoken language (Campbell, MacSweeney & Waters 2007; Chen Pichler 2012).

Linguistic research on sign languages started around 1960 with William Stokoe, who found that American Sign Language (ASL) was endowed with elements similar to phonemes of spoken languages. He called these elements 'cheremes', from the Greek word *xeir* meaning 'hand', to set the difference with phonemes in spoken languages. The ground-breaking study by Stokoe started a tradition of linguistic research which has uncovered the richness and complexity of sign languages in all domains of the grammar.

Since this dissertation mainly explores the morphophonological properties of evaluative strategies in LIS, the present chapter is meant to provide the necessary background on sign language lexicon and morphophonology to understand the analysis developed in Chapter 4. As in spoken languages, the domains of phonology and morphology are strictly connected in sign languages, with influences reflected at the lexical level as well.

Along these lines, I first introduce the basic elements involved in the articulation of a sign (i.e. the phonological parameters) (§ 2.2), and then discuss how their different functions motivate the common distinction between core and non-core lexicon in § 2.2.1. § 2.2.2 is devoted to iconicity, which is a pervasive property of the lexicon of sign languages. § 2.2.3 and § 2.2.4 are dedicated to non-manual markers (NMMs) and classifiers (CLs), respectively. § 2.2.4.1 focusses on size and shape specifiers (SASSes).

As these are crucial elements in the morphological constructions analysed in Chapter 4, they deserve to be discussed in dedicated sections. In § 2.3 I discuss how sign language phonologists have dealt with phonological parameters. Specifically, I describe the Prosodic Model (Brentari 1998), which is the model adopted in this dissertation since it allows to account for the phonological structure of both core (§ 2.3.1) and non-core signs (§ 2.3.2). In addition, § 2.3.2 shows how the application of the Prosodic Model to account for the morphophonemic nature of features in classifier morphemes integrates iconic features with morphophonological constraints. § 2.4 explores morphological processes in sign languages. Particularly, § 2.4.1 illustrates inflectional processes, namely those involving the encoding of morphosyntactic features, whereas § 2.4.2 explores derivational processes, which are involved in the formation of new lexemes. Specific attention is dedicated to processes of derivation, in order to provide the necessary information to follow the analysis in Chapter 4. Therefore, I describe sequential derivation in § 2.4.2.1, and simultaneous derivation in § 2.4.2.2. § 2.4.2.3 is devoted to evaluative morphology, which exploits both sequential and simultaneous strategies across sign languages. The morphological processes investigated constitute a morphological type, as explained in § 2.5.1. The chapter closes with the discussion of the importance of including sign languages within typological studies (§ 2.5.2).

2.2 The lexicon of sign languages

The seminal study developed by William Stokoe in 1960, also known as the 'Cheremic Model', was the first to investigate the sub-lexical structure of signs. He showed that signs result from the combination of phonological parameters, namely: handshape, movement and location. Stoke (1960) called these parameters *cheremes* since he considered them to be the signed parallel of phonemes in spoken languages.

Later studies added orientation (Battison 1978) and non-manual markers (Baker-Shenk 1983) to the set of formational parameters. In a nutshell, handshape corresponds to the configuration of the hand(s) while articulating the sign; location identifies the place in which the sign is articulated, on the signer's body or in the signing space; orientation results from the relation between a handpart and the plane of articulation (see § 2.3.1 for details); movement indicates the movement displayed by the sign, whereas non-manual markers identify articulators other than the hands, which can fulfil phonological as well as other grammatical functions (discussed in § 2.2.3 below).

2.2.1 Core vs. non-core lexicon

In the previous section, I have introduced the phonological parameters involved in the formation of signs, which are: handshape, location, movement, orientation and NMMs. The parameters are meaningless units functioning as phonemes in spoken languages, and their combination results in a meaningful element, i.e. the sign. In so doing, sign languages demonstrate to display duality of patterning (Hockett 1960), namely the possibility specific of human languages to combine meaningless units (the phonemes) into meaningful elements (words or morphemes). Crucially, the sub-components of signs often carry meaning. Therefore, it is common to use the term 'phonomorphemes' (Johnston & Schembri 1999) to refer to these formational units which are themselves meaningful. The direct consequence of the double nature of formational parameters is reflected in the lexicon of sign languages, which includes signs with different morphophonological properties and various degree of iconicity.

When considering the lexicon of sign languages, we must distinguish between the native and non-native lexicon (Brentari & Padden 2001). The native lexicon includes signs that have developed naturally among native signers, whereas the non-native lexicon comprises forms derived or borrowed from other languages. Signs belonging to the native lexicon respect the phonological patterns of the language and they are conventionalised form and meaning associations recognised by the linguistic community.

Within the native lexicon, we further distinguish between core and non-core lexicon. The former includes signs constituting the established (also called 'frozen') lexicon, namely, lexical items that are the phonological realisation of lexemes and can be found in dictionaries. On the other hand, non-core lexicon includes more complex signs, whose origin lies in metaphoric or visual motivations, such as classifiers or pointing signs. For this reason, non-core lexicon is also referred to as the 'productive' lexicon. Johnston & Schembri (1999) have identified several properties which distinguish core from non-core signs in Australian Sign Language (Auslan). These properties were shown to hold for other languages and are found in LIS as well.

i. Core lexicon signs respect the phonological constraints and make use of the phonological parameters of the language. Non-core signs, instead, display more freedom in combination;

ii. the sub-lexical units of core signs are discrete and categorical, whereas non-core signs display gradience and variation in form which reflect variation in meaning;
iii. meaning in core lexical signs is non-componential and does not depend on the context (i.e. arbitrary), whereas non-core signs are visually motivated and context-dependent;
iv. core lexicon signs are usually monomorphemic and monosyllabic, whereas non-core signs tend to be more complex;
v. core lexical signs exploit space phonologically, whereas non-core signs exploit the topographic function of space, namely they locate referents as they are positioned in the real world (isomorphically);
vi. signs of the core lexicon are usually accompanied by mouthings, whereas non-core signs mainly involve mouth gestures (see § 2.2.3 below).

Battison (1978) defined some constraints that two-handed core signs must respect. Specifically, he identifies three types of two-handed signs: (i) Type 1 (symmetrical signs) includes signs in which both hands are active, display the same configuration and move either in synchronous or alternating manner; (ii) Type 2 groups two-handed signs displaying the same configuration, but one hand is active and the other is passive; (iii) Type 3 refers to two-handed signs in which the two hands display different configurations, and one is active while the other is passive. Type 2 and Type 3 belong to the group of two-handed asymmetric signs.

Two-handed lexical items are constrained by the s*ymmetry condition* and the *dominance condition* (Battison 1978: 33-35). The symmetry condition requires that if both hands are active (i.e. move independently), they must display the same handshape, location and the same movement, either symmetrical or alternating. On the other hand, the dominance condition demands that if the two hands display different handshapes, only one hand moves while the other must be passive (i.e. not moving), and the passive hand must display a handshape selected from a restricted set ('B', 'A', 'S', 'C', 'O', '1', '5').

2.2.2 Iconicity

Both core and non-core signs display a certain degree of iconicity, even though it is much more prominent in non-core signs. Iconicity refers to the correspondence between form and meaning, and it is a property of both sign and spoken languages. In sign languages this is evident in the degree of resemblance between the sign and the concept it encodes. It is important to underline that iconicity does not only depend on the similarity between the sign and the meaning conveyed, rather, it also involves culture and conceptualisation.

Taub (2001), recently followed by Emmorey (2014), claims that iconicity is better understood as the relationship between our mental model of the image and the referent, being the model constructed on our experience as humans living in a specific society and sharing cultural traditions. The lexical representations of concepts are structured representations of our sensory-motor experience (embodied cognition) and reflected in our language. In other words, both the mental representation and the linguistic mapping are language-specific and largely related to cognitive processes. This explains why signs belonging to the core lexicon of different sign languages differ from each other, despite being iconic to some extent.

Iconicity today is recognised as being pervasive in sign languages and it is considered a constitutive part of their structure. For instance, Pietrandrea (2002) shows that 50% of handshapes in LIS are motivated by the association with the portion of meaning they convey. However, this is a recent development. The first linguistic researches on sign languages aimed at demonstrating that they were true natural languages rather than simple gesturing, as it was initially thought. Consequently, by admitting the presence of iconicity, researchers were afraid of downgrading sign languages to a pantomime and to obscure duality of patterning. The fact that signs display iconicity could, however, not be ignored. The first to change attitude towards iconicity were Klima & Bellugi (1979), who acknowledged that the phonological form of ASL signs was influenced by iconicity, but it was controlled by linguistic constraints. This initiated a tradition of studies investigating iconicity in sign languages which considered it an opportunity to further discover the functioning of human Language in the visuo-gestural modality. Indeed, by having the possibility of using two manual articulators to produce signs in the three-dimensional space, sign languages are naturally predisposed to imagistic representation of concepts (see Meir 2010 for further details). It is now widely accepted that iconicity is pervasive across sign languages and instead of being considered a negative aspect, it is considered as a mechanism contributing to the richness and formation of sign language lexicon and grammar.

In the next two sections, I consider two sign language specific elements belonging to the native lexicon which display a certain degree of iconicity, and clearly show the alternation phoneme-morpheme in their fulfilling different grammatical functions. This will prepare the path to understanding the morphological processes illustrated in § 2.4.

2.2.3 Non-manual markers

Non-manual markers (NMMs) are one of the formational parameters involved in the articulation of signs. They are a set of facial expressions, head and body movements which can display different grammatical and prosodic functions (Pfau & Quer 2010; Mohr 2014, among others). They are a good example of phonomorphemes since they can either function as distinct features being specified in the lexical entry of the sign, or as morphemes. It is important to specify that non-manual markers are grammatical units whose occurrence is regulated by the linguistic system. They differ from affective non-manuals, such as brow raise for surprise, in scope, duration and function (Hickok, Bellugi & Klima 1996; Corina, Bellugi & Reilly 1999). I will return to this below.

After Woll (2001), it is common to distinguish between mouth actions and other non-manuals (movements of the eyes, brows, head and body). Mouth actions are further divided into mouthings and mouth gestures. Mouthings are derived from the spoken language of the surrounding hearing linguistic community and consist in the silent articulation of the word corresponding to the sign. They are usually employed to disambiguate lexemes realised with the same manual sign. Mouth gestures, instead, are sign language specific elements involving configurations of the mouth such as tongue protrusion, puffed cheeks, grinding teeth. Within mouth gestures, we further distinguish between echo-phonology, enaction and adverbials. Echo-phonology (Woll & Sieratzki 1998) refers to oral movements mirroring the movement of the manual articulators iconically. According to the authors, these oral components are not derived from spoken words and are obligatory in the citation form of some signs. What distinguishes oral movements in echo-phonology from the other mouth actions is that in echo-phonology the oral component displays a change in mouth configuration during the articulation of the sign (for instance, exhalation of breath or puffing cheeks). Enaction is the direct representation of the action performed by the mouth during the manual articulation of the sign. Adverbials, instead, are mouth actions carrying adverbial (or adjectival) meaning modifying the manual sign.

I summarise the different types of non-manual markers in the figure below for clarity.

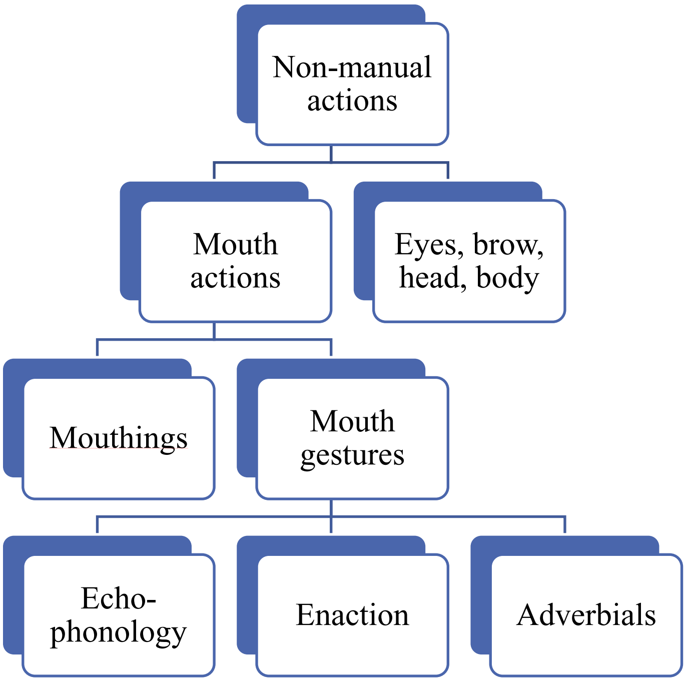


Figure 9. Non-manual actions in sign languages (based on Woll 2001)

Non-manuals in sign languages are crucial at all levels of the grammar. I exemplify their functions[6] with examples from LIS (see Franchi 2004; Amorini & Lerose 2012 for further information).

At the phonological level, NMMs can function as distinctive features and are specified in the lexical entry of the sign. For instance, the sign FAT is lexically specified for the mouth gesture puffed cheeks 'pc', as shown below.

(18) FAT [SHLISG-2-1_5_1] (FAT marked with pc)

[6] Syntactic non-manual markers are only mentioned for the sake of completeness. See Pfau & Quer (2010) and Pfau (2016) for an overview.

The mouth gesture in (18) is an example of echo-phonology since puffed cheeks mirror the movement of the manual component of the sign. However, this is not always the case. For instance, in (19) the sign I glossed SUCCESS is used when you succeed in doing something after having faced some difficulties. It is marked by the mouth gesture [pa] which is neither semantically related to the sign, nor a mouthing since it is not a word attested in Italian.

_____[pa]

(19) SUCCESS

‘To succeed in doing something.’ [MI_na_150]

At the morphological level, non-manuals can either convey adjectival information while modifying nominal signs,[7] or adverbial information when occurring with verbs, as illustrated below. In (20), the non-manuals furrowed eyebrows (‘fe’) and grinding teeth (‘gt’) convey the meaning ‘with effort’. In this example, they occur with the predicate and convey the effort in taking a very heavy book.

______________________________fe+gt

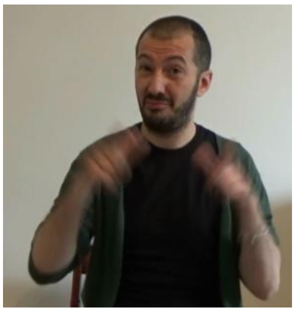
(20) (BOOK) CL(unspread curved open 5): ‘take’

‘I take the heavy book with effort.’ [MI_na_83]

[7] Non-manual markers encoding adjectival information in LIS are extensively described in Chapter 4.

At the syntactic level, non-manuals are employed to (i) change the polarity of a sentence, (ii) determine the sentence type, or (iii) mark constituents. In (21) I show the typical NMMs for wh-questions, namely furrowed eyebrows (Cecchetto, Geraci & Zucchi 2009), here marking the sign HOW. In (22), I provide an example of a topicalised constituent, more specifically, a scene-setting topic (PARK) marked by squinted eyes ('sq') and raised eyebrows ('re') (Calderone, to appear).

fe
(21) HOW
'How?' [GA_na_129]



sq+re hn+eb sq+re
(22) TODAY PARK JOHN$_i$ DOG POSS$_i$ CAT BARK
'Today, at the park, John's dog barked at the cat.'

In (22), the non-manuals head-nod ('hn') and eye-blink ('eb') function as prosodic markers in defining constituent boundaries (Calderone, to appear).

Considering the non-manual markers and their functions, Wilbur (2000) argues that non-manuals of the lower face (mouth, tongue, cheeks) are involved to convey adjectival and adverbial information, therefore these markers are usually associated with lexical items such as nouns, verbs, adjectives or related phrases. In Chapter 4, I show that this holds for LIS as well. On the other hand, non-manuals belonging to the upper part of the face, namely eyebrows, eyegaze, head movements and positions are mainly involved in syntactic and prosodic functions. Crucially, NMMs in sign languages display layering, which means that different non-manuals can simultaneously occur since they belong to different layers (eyes, mouth, shoulders). This ‘vertical processing’ (Napoli 2018) is typical of sign languages thanks to the possibility of exploiting different articulators simultaneously.

All the non-manuals described so far share the fact they are linguistic elements. Indeed, they display specific scope (either lexical or syntactic) defined by a rapid onset and offset. Moreover, they are consistent among signers, obligatory, and they involve a discrete number of facial muscles to be articulated (Dachkovsky 2007). Affective facial expressions, instead, display greater variability in scope and shape, and their articulation is optional. These criteria will be useful to understand the nature of the NMMs analysed in Chapter 4.

2.2.4 Classifiers

Sign language classifiers are meaningful handshapes functioning as morphological categories. They are used to classify referents considering some salient properties: their shape, the abstract semantic category or how they are handled. Classifiers can denote both animate and inanimate entities. Their form is visually motivated and they can display changes that correspond to changes in meaning. Moreover, they exploit the topographic function of the signing space allowing to locate referents as they are in the real world, in an isomorphic manner. As a consequence, they are iconic elements belonging to the non-core lexicon of sign languages. Nonetheless, sign language classifiers select handshapes belonging to the phonological inventory of sign languages and they are governed by linguistic constraints. Several studies (a.o. Supalla 1982; 1986; Engberg-Pedersen 1993; Bergman & Wallin 2001; Emmorey 2003; Zwitserlood 2003; Benedicto & Brentari 2004) have shown that different and unrelated sign languages are endowed with classifier systems displaying the same properties, but different classifications have been proposed.

As far as LIS is concerned, the main studies investigating classifiers are those by Corazza (1990) and Mazzoni (2008). For the sake of clarity, in this dissertation, I follow the general division in four groups of classifiers attested across sign languages (Quer et al. 2017), and in LIS as well: (i) entity classifiers (also called whole entity classifiers), (ii) body part classifiers, (iii) handle classifiers (also called handling classifiers) and (iv) size and shape specifiers (SASSes). I describe each category with reference to LIS. SASSes constitute a distinct category, as will be explained below.

i. *Entity classifiers:* handshapes belonging to this group classify referents considering their shape as a whole or their semantic category (humans, vehicles, animals, objects). The LIS handshapes functioning as entity classifiers are provided in the table below.

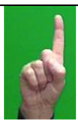
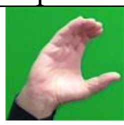
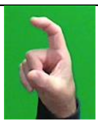
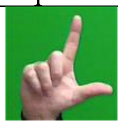
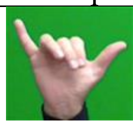
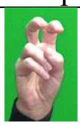
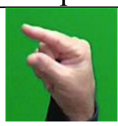
 G	 4	 5	 unspread 5	 unspread V
 flat closed 5	 F	 curved closed 5	 spread curved open 5	 unspread curved open 5
 curved open L	 flat closed L	 flat open 3	 L	 Y
 curved open V	 3	 flat open L	 V	

Table 3. Entity classifiers in LIS [SHLISG-4-5_1_1]

To illustrate, in (23) I provide the entity classifier used in LIS to denote both animate and inanimate entities with a long and thin shape, whereas (24) shows the classifier handshape for two-wheeled vehicles.

(23) CL(G): ‘person_moving’

‘A person is coming in.’ [SHLISG-4-5_1_1]

(24) MOTORCYCLE CL(3): ‘vehicle_parked’

‘The motorcycles are parked there.’ [SHLISG-4-5_1_1]

ii. *Bodypart classifiers*: handshapes within this category denote referents considering only one part of them, for instance a part of the body. The handshapes employed as bodypart classifiers in LIS are listed below.

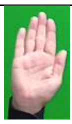
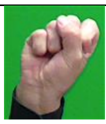
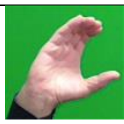
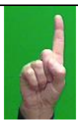
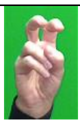
 unspread 5	 closed 5	 F	 unspread curved open 5	 V
 G	 curved open V	 3	 flat closed 5	

Table 4. Bodypart classifiers in LIS [SHLISG-4-5_1_2]

Handshape V, for instance, denotes humans by referring to their legs. In (25) below, handshape V references a person lying in bed.

(25) dom: CL(V): ‘person_lying’

n-dom: CL(unspread 5): ‘bed’

‘A person is lying in bed.’ [SHLISG-4-5_1_2]

iii. *Handle classifiers*: classify entities considering the way in which they can be handled or manipulated. The handshapes used as handle classifiers in LIS are provided below.

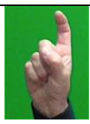
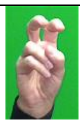
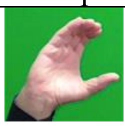
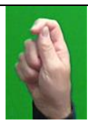
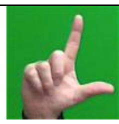
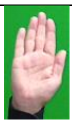
 G	 curved open G	 curved open V	 F	 flat closed 5
 flat open 5	 unspread curved open 5	 closed 5	 closed G	 L
 unspread 5	 curved closed 5			

Table 5. Handle classifiers in LIS [SHLISG-4-5_1_3]

For instance, the F handshape is used with light and thin entities such as pens, pencils, flowers, papers, or thin books, as in (26).

(26) CL(F): ‘thin_book_holding’
‘(She) takes a thin book.’ [SHLISG-4-5_1_3]

Handshape classifiers in LIS, and in other sign languages in general, fulfil different syntactic functions. They can be used as inflection markers for body-anchored nouns which do not allow to be inflected in the signing space for numerosity or to realise agreement (Pizzuto & Corazza 1996). In so doing, they function as proforms and allow anaphoric reference. Furthermore, classifier handshapes can combine with verbal roots of motion, handling and location resulting in morphologically complex constructions called ‘classifier predicates’.

Classifier predicates consist of a handshape, which identifies the referent, and a movement, which reflects how the entity moves in space, how it is handled or where it is located. The handshape selected defines the type of predicate (Benedicto & Brentari 2004). In LIS, entity classifiers realise unaccusative predicates, bodypart classifiers form unergative predicates, whereas handle classifiers select for transitive predicates (Mazzoni 2008). I will not discuss these predicates in detail since they are not relevant for this dissertation.

The last category of classifiers usually attested in sign languages comprehends size and shape specifiers. Since SASSes play a crucial role in the encoding of evaluative features, as shown in Chapter 4, I introduce them in a dedicated section below.

2.2.4.1 Size and Shape Specifiers (SASSes)

Generally speaking, size and shape specifiers are manual signs employed to convey information of size and shape of referents, by means of a tracing movement outlining the perimeter of the entity. These elements have been called in many different ways in the literature on sign languages (Emmorey 2003 for an overview): SASSes (Johnston &

Schembri 2007), tracing SASSes (Supalla 1982; 1986; Nyst 2007 for Adamorobe Sign Language), depicting nouns (Ferrara 2012), or contour signs (Zwitserlood 2003: 163).

The term Size and Shape Specifiers (SASSes) was first introduced by Newport & Bellugi (1978), who consider SASSes in ASL as part of compounds in which they indicate a general class of shapes. For instance, the SASS describing a rectangular shape would be employed for a brick, an envelope or a postcard, without displaying modifications to specify details of size or shape.

Later, Supalla (1982) proposes a morphological analysis of SASSes, arguing that SASSes are handshapes, rather than signs, which can combine with verbs of motion or location, thus resulting in a morphologically complex structure. Crucially, according to the author the SASS handshapes are morphologically complex themselves, in that each finger and the thumb may function as a separate morpheme. Supalla (1986) proposes the distinction between 'static SASSes' and 'tracing SASSes'. *Static SASSes* are handshapes which indicate referents considering their size and shape, whereas *tracing SASSes* are handshapes combined with an outlining movement defining the shape of the referent. For the author, the only difference between the two categories is the feature of movement to trace shape. However, the two categories actually differ in many morphosyntactic respects, as shown by Zwitserlood (2003: 153–159), who also argues that the handshapes called static SASSes by Supalla (1982; 1986) are actually entity classifiers (§ 2.2.4). Indeed, (i) in static SASSes the handshape functions as verbal argument and represents the referent. Conversely, the handshape in tracing SASSes refers to the shape of the referent, not to the referent itself; (ii) movement displayed by static SASSes is the verbal root, representing the motion or location of the entity. Movement in SASSes, instead, further describes the shape and size of the referent; (iii) the handshape in static SASSes represents the referent as a whole, whereas tracing SASSes provide more details about the shape of the referent, by tracing its outline or modifying the hand configuration; (iv) tracing SASSes are never used to trace back the referent in the discourse. In other words, the primary function of static SASSes is to classify referents, whereas tracing SASSes specify information of size and shape, thus functioning as modifiers, or non-verbal predicates. This function has been identified by Bergman & Wallin (2001; 2003) for Swedish Sign Language (SSL) as well. The authors describe that when functioning as (non-verbal) predicates, these classifiers are introduced by dedicated NMMs, such as head nod and eye-blink. Moreover, eye-gaze during the articulation of the SASS is directed toward the hands, rather than to the interlocutor.

As far as Italian Sign Language (LIS) is concerned, classifiers describing the size and shape of referents have been mentioned in passing, but in-depth analyses are missing. Among the categories identified by Corazza (1990), 'descriptive' and 'perimeter classifiers' resemble SASSes in their function of conveying information about the shape or perimeter of entities. I provide the configurations below.

Table 6. Descriptive classifiers (Corazza 2000: 79)

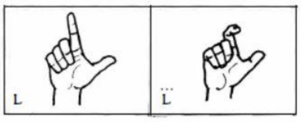


Table 7. Perimeter classifiers (Corazza 2000: 80)

Mazzoni (2008: 163), who follows the classification proposed by Engberg-Pedersen (1993) and includes SASSes within the category of extension and surface classifiers, mentions that SASSes form verbal predicates and that they can combine with roots of motion, resulting in unaccusative predicates.

However, neither of these studies provide information about the morphosyntactic properties or distribution of SASSes, and it isn't clear whether they are being treated as static or tracing SASSes.

An in-depth analysis of these elements will be developed in Chapter 4 (§ 4.3) in order to fill the gap and improve the understanding of SASSes in LIS. The criteria defined by Zwitserlood (2003) will be discussed and will be used to define the properties of size and shape specifiers in LIS.

For the time being, I will adopt the general term SASSes to refer to both one and two-handed signs conveying information on the size and shape of referents.

2.3 The Prosodic Model (Brentari 1998)

After having introduced some aspects of the lexicon of sign languages, in this section I focus on the sub-lexical structure of signs, thus considering the phonological parameters of handshape, location, movement, orientation and NMMs. These elements were considered as constituting the phonological structure of signs since they were all distinctive in minimal pairs, and it was assumed that they were single units, with no internal hierarchical organisation.

Later on, Frishberg (1975) and others demonstrated that these parameters were actually groups of distinctive features, which were the protagonists in minimal pairs. In other words, the so-called phonological parameters are further composed of clusters of features, in parallel to what happens in spoken languages in the relation between phonemes and their phonetic realisation. Sign language phonologists followed the trends of the time in phonology and tried to develop models that would allow to account for the sub-lexical structure of signs, as well as for the organisation of features. Stokoe's (1960) model only focussed on the simultaneous combination of the parameters resulting in the sign. Later models proposed the existence of sequentiality within simultaneity, by identifying linear segments (i.e. timing units) within the sign. These were described as 'hold' and 'movements' in the Hold Movement Model developed by Liddell & Johnson (1989), and later substituted by 'locations' and 'movements' in the Hand Tier Model formulated by Sandler (1986; 1989) and refined in Sandler & Lillo-Martin (2006). To be precise, holds/locations were compared to consonants, whereas movements were paralleled to vowels. Segments were recognised as having a number of articulatory features, but in the Hold Movement Model they had no hierarchical structure. Sandler was the first to recognise the autosegmental (non-linear) nature of the handshape parameter and to provide a hierarchical organisation for the class of features, followed by the Prosodic Model (Brentari 1998) and the Dependency Model (van der Hulst 1993; van der Kooji 2002). According to the phonological theory of 'autosegmental phonology' developed by Goldsmith (1976), phonological segments result from the combination of simultaneous features geometrically combined. To say it in Goldsmith's (1976: 28) words: "Autosegmental phonology suggests that the phonetic representation is composed of a set of several simultaneous sequences of these segments, with certain elementary constraints on how the various levels of sequences can be interrelated or associated." By adapting this assumption to sign languages, the phonological models mentioned above consider the phonological parameters as being autosegments, in the sense that they result from the combination of features and constitute single units displaying similar behaviour in some morphological operations. Moreover, they show the properties defining autosegmental tiers in spoken languages: stability, morphological status, many-to-one association and long-distance effects (Goldsmith 1976). This was confirmed by the application of two constraints: (i) the *selected fingers constraint* (Brentari 1998), and (ii) the *handshape sequence constraint* (Sandler 1989), which capture the facts that a stem can have only one set of selected fingers and these can only change as far as joints configuration is concerned. If a sign displays two different handshapes in sequence, it is a polymorphemic construction, such as a compound (Brentari, in press.).

The aforementioned phonological models share the capacity of accounting for both the sub-lexical structure of signs, as well as for the hierarchical and simultaneous combination (i.e. paradigmatic) of features involved in the composition of handshape, POA and movement. However, they also differ to some extent (Brentari 1998 for discussion).

In this dissertation, I consider the Prosodic Model (1998) since it allows to account for the phonological structure of both core and non-core lexicon signs. Despite the fact that the model was developed to account for the phonology of ASL, it can be used for other sign languages as well, as Aristodemo (2013) has demonstrated for LIS.

In the following sections, I describe the model as to account for the phonological structure of core signs (§ 2.3.1), as well as its implementation to account for the morphophonemic nature of features in classifiers handshapes (§ 2.3.2).

2.3.1 Phonological structure of core signs

The Prosodic Model was developed by Brentari in 1998, building on the aforementioned phonological models. The model assumes that handshape (HS), place of articulation (POA) and movement (MOV) have autosegmental properties and are hierarchically organised, as illustrated below.

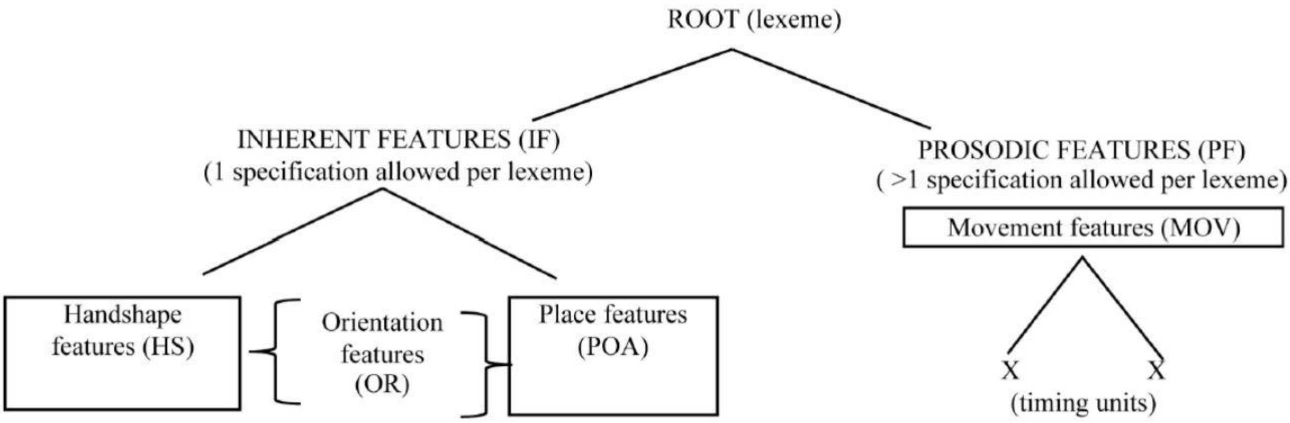


Figure 10. Prosodic Model overview (Brentari 1998)

As Figure 10 shows, the structure is dominated by the root node, which corresponds to an entire lexeme. This is a non-trivial aspect, as it distinguishes sign languages from spoken languages, in which the combination of features results in vowel or consonant-like units rather than in an entire lexeme (Brentari 1998). The root results from the combination of *inherent features (IF)* and *prosodic features (PF)*. The former refer to the properties of the sign that do not change during its articulation and are simultaneously realised. On the other hand, prosodic features indicate the properties that do change during the articulation of the sign and are sequentially specified. Movement features are considered independent from the other parameters and they are assigned a dedicated branch in the structure.[8]

In assuming the theoretical concepts of Dependency Theory (Anderson & Ewen 1987; Hulst 1993), features are organised in labelled class nodes which are maximally binary-branching and have both a head and dependents, with the head being the branch that is more elaborated in the structure (for instance, selected fingers with respect to non-selected fingers in Figure 11 below). Moreover, the model follows the Feature Geometry (Clements 1985) and assumes that features are hierarchically organised according to their phonological behaviour and articulatory properties.

The overall organisation of features is provided below.

[8] See Brentari (1998: 25) for details about this proposal.

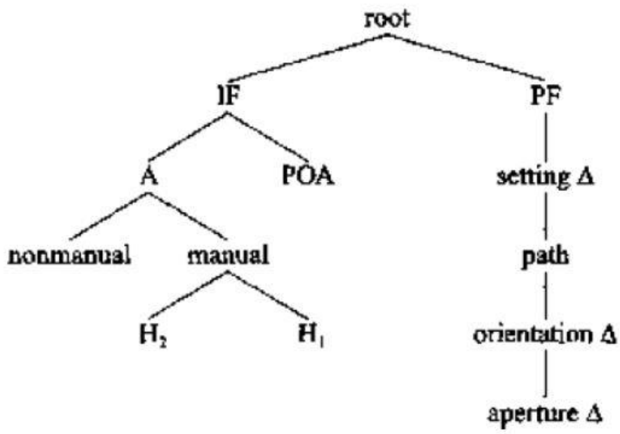


Figure 11. Feature organisation in the Prosodic Model (Brentari 1998: 26)

The root node dominates the structure, conversely at the bottom there are terminal nodes, where most of the features are located. In-between, there are class nodes. Crucially, in the phonological structure of signs, as opposed to words in spoken languages, the minimal concatenative units are the terminal features (Brentari 1998: 66).

The IF node branches into the *articulator* node (A), defining the arm(s) or hand(s) employed to articulate the sign, and *place of articulation* (POA). If the sign is two-handed and there is contact between the two hands, the feature [contact] is specified at the articulator node. Here, also the feature [symmetrical] can be expressed to indicate that analogous parts of the hands are oriented toward each other. Articulator is further divided into the *non-manual*, indicating the NMMs which are lexically specified for a sign (Brentari 1998: 100), and the *manual* tier, containing the feature specifications for the hand(s) involved. If the sign is two-handed, the H2 (non-dominant hand) node is activated, and here the feature [alternating] can be specified if the two hands move 180° out of phase with one another. The distinctive handparts specified at the *hand* node are eight: palm of the fingers, fingers front, back of palm, back of fingers, radial side of selected fingers (RAFI), ulnar side of selected fingers, tip of the selected fingers/thumb, heel of hand. In two-handed signs with [contact], these places specify where the contact between the two hands occurs (Brentari 1998: 46). The articulator branch is provided below.

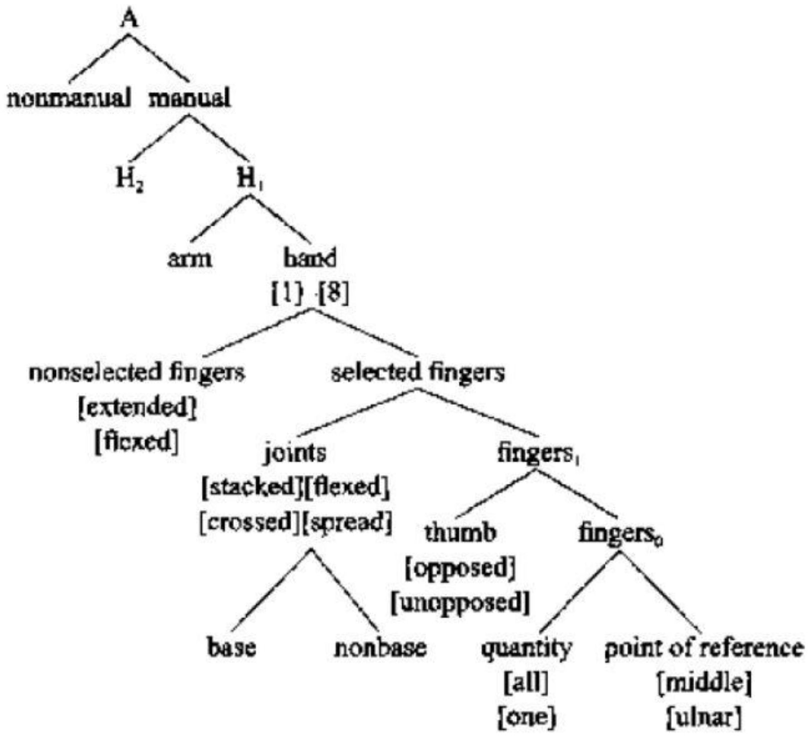


Figure 12. Articulator branch, Prosodic Model (Brentari 1998: 100)

The hand node branches into *non-selected*, which can be either [extended] or [flexed], and the *selected fingers* node, which specifies the fingers selected and active (i.e. they can move) during the articulation. As for selected fingers, it can be specified whether the thumb is active and the shape of the base or non-base joints, as well as the quantity of fingers selected (excluding the thumb) with respect to the point of reference. The selected fingers node is important for the definition of a lexeme. This is how Brentari (1998: 295) defines the *selected fingers constraint on prosodic words*: (i) aperture changes affect only selected fingers; (ii) core lexemes consist of one set of selected fingers.

At the POA node it can be specified where the sign is articulated. Specifically, it indicates the plane towards which the handpart specified at the hand node is directed. It is divided into three planes of articulation: horizontal (y-plane), vertical (x-plane) and midsaggital (z-plane). The x-plane also includes the plane of the body, specifying four major regions: body, head, torso and arm. Each region has eight place distinctions. Orientation results from the relation between a handpart and the plane of articulation (inherent orientation). If the sign has movement, orientation corresponds to the handpart pointing in the direction of the final point of the movement. Notice that there is a different type of orientation (prosodic orientation) which is specified in the PF branch and refers to changes in orientation resulting from types of movement.

Movement features are specified at the PF node and hold a many-to-one relation with handshape features. These are dynamic features in that they can change during the articulation of the sign. Differently from inherent features, which are simultaneous, prosodic features are sequential and generate two timing slots. The figure below shows the prosodic branch of the structure.

Figure 13. Prosodic Features (Brentari 1998: 130)

Movements can be specified for their starting and ending point, their trajectory or shape. In particular, the node *setting* defines a movement displaying two points of articulation (start and end position) in the same body region (e.g. ipsi to contro-lateral; top to bottom). *Path* indicates movements having shape and direction, whereas *orientation* refers to movements resulting in changes of orientation (from supine to prone, from extended to flexed). *Aperture* allows to indicate whether the sign displays a change in configuration, from open to close or vice versa. A sign can display different types of movement: handshape changes, orientation changes, setting changes and path features. The type of movement depends on the part of the body that is involved. Finger joints encode handshape changes, while wrist and forearm can display orientation changes (also called local or secondary movements). On the other hand, elbow and shoulders realise path movements which can display different shapes (arc, straight, etc.), specified at the PF node, and changes of setting. Movements can be distalised or proximalised, namely they can be executed with a joint further away from or closer to the torso. Distalised movements results in reduced articulation, since they involve more distal joints (wrist or finger joints). Conversely, proximalisation results in bigger movements since the joints are more proximal to the signer's body. Movements hold a relation with POA as well: they can either be perpendicular to the plane of articulation or within it. Specifically, [tracing] indicates movements executed within a plane, whereas [direction] defines that a movement is perpendicular to the plane of articulation (i.e. a movement towards a point). The [tracing] vs. [direction] features predict the type of [contact] the sign can eventually display: tracing implies constant contact throughout the path movement, whereas with direction movements, contact is where the sign meets the plane and it can either be at the beginning or end of the path movement. Notice that orientation in the PF branch does not define a relation between a part of the hand and the POA, rather, it defines values that capture how the wrist or forearm move.

From the structure, it can be inferred that prosodic features are realised sequentially, and this bears importance as far as the syllabic structure of signs is concerned. The model defines the criteria for counting sign syllables: (i) the number of syllables corresponds to the number of sequential movements; (ii) if several secondary movements co-occur with a longer path movement, the path movement counts as the only syllable movement; (iii) two or more simultaneous movements (such as aperture change) count as one syllable.

To conclude, the innovation of this model is that it allows to account for both the simultaneous and sequential features of signs in a unique structure, from which the syllabic structure can also be derived. The only parameter that phonological models do not really consider is non-manual markers. Indeed, the Prosodic Model includes in the structure those non-manuals participating in the phonological structure of signs (i.e. those that are lexically specified and phonologically distinctive), however it is not clear where those having morphological and syntactic functions should be placed. As I mention in § 2.5.1, Pfau (2016) proposes a dedicated tier for non-manuals in order to explain their correspondence to the skeletal tier of the sign.

2.3.2 Morphological template for classifiers

As I mentioned above, the Prosodic Model is able to capture the structure of both core and non-core lexicon signs. Brentari (2005) shows how the same model can be used to account for the morphophonemic structure of classifiers in ASL, which involves sequential and simultaneous features as well. She assumes the distinction between 's-morphs' and 'p-morphs' (Johnson & Liddell 1984). S-morphs are concatenative morphemes, whereas p-morphs are simultaneous, namely they occur within a single unit of time. By applying the feature geometry of the Prosodic Model to the classes of features involved in the morphemes that constitute classifiers, Brentari (2005) provides dedicated phonological structures for each classifier handshape, showing that the features involved are systematically organised. The differences among the handshapes consist in the different class nodes allowing for morphological alternation. Crucially, the possibility of allowing for morphological alternation is specific of classifier handshapes. The innovation of this model is the possibility of accounting for these alternations by using the same phonological hierarchy employed for core lexicon signs.

The morphological class nodes are those in which a change in form results in a new form with different but related meaning. Conversely, if a change results in a different and unrelated or ungrammatical form, the node is strictly phonological. I provide the structures for the different types of classifiers below. Notice that letters in bold indicate the highest node in the tree including the sites for morphological alternations, whereas italics identifies the sites of morphological alternation.

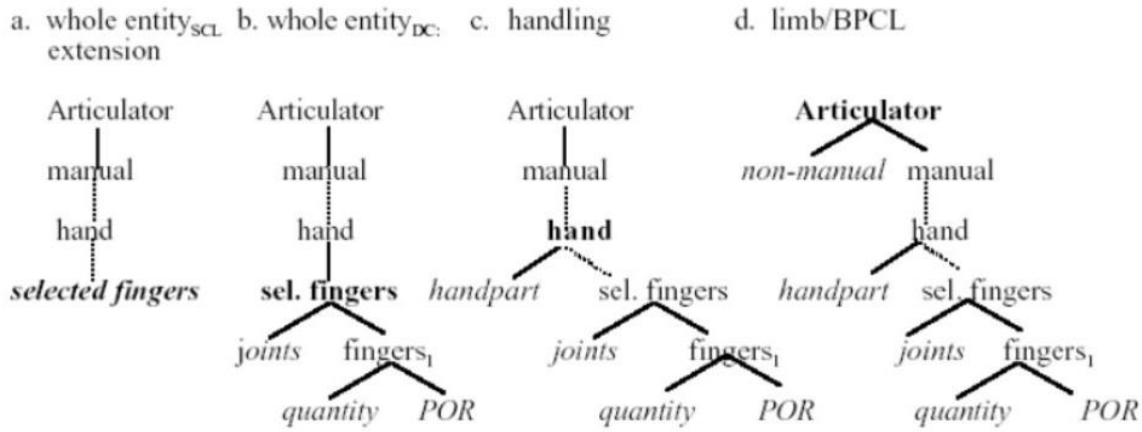


Figure 14. Morphological template for classifiers (Brentari 2005)

As the figure shows, each classifier handshape displays a specific features configuration, i.e. a morphological template. The advantage of relying on the same phonological structure lays in the possibility of clearly grasping the points of morphological alternation among handshapes.

Brentari (2005) follows the classification of handshape morphemes for classifier predicates defined by Engberg-Pedersen (1993). Specifically, she distinguishes between whole entity (WECL), handling (HCL), extension and surface (ESCL) and limb/body part (BPCL) classifiers. WECL refer to handshapes denoting the shape of referents as a whole, and include (i) semantic classifiers (SCL), template (a) in the figure above, which indicate classes of objects such as vehicles; (ii) instrumental classifiers, which denote referents used as instruments, such as toothbrush; (iii) descriptive classifiers (template (b) in the figure above), which are handshapes denoting referents considering their shape, for instance the B handshape (ASL) for flat objects such as bed, or paper. HCL include handshapes denoting referents considering the way they are held or manipulated. ESCL are handshapes that refer to the physical properties of the objects, not to the shape of the referent as a whole, thus specifying information about the perimeter or the width of the objects (these correspond to tracing SASSes in Supalla's (1982) terms). BPCL denote entities considering only one part of the body, for instance, the legs.

As far as entity classifiers are concerned, Figure 14 shows that the first morphological node is selected fingers. However, two types of entity classifiers are identified: semantic and descriptive. These two categories show the same morphosyntactic behaviour, namely, they form unaccusative predicates, but differ in the possibility of allowing other nodes to be morphologically productive. This is what happens in descriptive classifiers, in which joints, quantity of selected fingers and the point of reference are all morphologically relevant. Indeed, by changing these features, it is possible to refer to entities of different shape and size, thus creating new, but related morphemes. This alternation is interesting in that it shows a mismatch between phonology and syntax because the two categories of classifiers share syntactic properties, while having different phonological structures.

In Chapter 4, I show how this model is useful to account for the different categories of SASSes detected in LIS to encode evaluative features.

2.4 Morphological Processes

In the previous sections, I have briefly introduced the lexicon of SLs, as well as presented the characteristics of non-manual markers and classifiers, which exemplify the double nature of phonological parameters as phonomorphemes and display a certain degree of iconicity. I have focussed the attention on these two linguistic elements since they play a crucial role in the morphological processes that will be investigated in Chapter 4.

In this section, I consider morphological processes and their characteristics. Sign languages display the same morphological processes attested in spoken languages, despite with different preferences and properties (see Sandler & Lillo-Martin 2006; Meir 2012 for an overview). Indeed, morphemes are abstract units (Scalise & Bisetto 2008) whose phonological realisation is language-specific. They can display different forms (allomorphs or suppletive forms) and can be bound to the base or be free. The combination of morphemes and stems (or bases) results in a lexeme. Morphological processes are defined considering the morphemes involved. As in spoken languages, we can distinguish between inflectional and derivational morphology. Inflectional morphology refers to morphological processes involving morphemes that carry syntactic features such as case or number. Derivational morphology, instead, involves morphemes encoding lexical information. Crucially, in sign languages morphemes can be realised both manually and non-manually, and they can be sequentially or simultaneously attached to the base.

Sequential processes consist in the addition of a phonological segment (affix) to the stem (affixation, also known as concatenative morphology), or in the total or partial repetition of the stem (reduplication). On the other hand, simultaneous morphology consists in the modification of a segment of the stem by altering one or more phonological parameters of the manual sign (stem modification), or in the simultaneous articulation of dedicated non-manual markers to the manual sign functioning as base. These processes are also defined as non-concatenative, in that the addition of affixes is simultaneous to the stem.

Sign languages show a marked preference for simultaneous processes, which has been attributed to their nature of visuo-gestural languages (Aronoff, Meir & Sandler 2005). Moreover, according to Aronoff et al. (2004; 2005) simultaneous processes in sign languages mainly affect the movement component of the stem, and they can be found in both inflectional and derivational morphology. On the other hand, sequential processes involving the addition of a bound morpheme, which is often grammaticised from a free word, can only be employed for derivational morphology. In other words, they are much rarer than simultaneous strategies.

Before illustrating morphological processes in sign languages, and in LIS in particular, it is necessary to recall what makes a unit morphological: (i) it must be discrete, namely it contains a limited number of features; (ii) it must be productive, namely it must be able to occur with different lexical bases; (iii) it must carry a specific meaning (Brentari in press).

I illustrate morphological processes in sign languages with examples taken from LIS. I will first consider inflectional morphology (§ 2.4.1), and then derivational morphology (§ 2.4.2).[9]

2.4.1 Inflectional morphology

Generally speaking, inflectional morphology refers to those morphological processes modifying the form of words or signs in order to encode morphosyntactic features such as gender, tense, aspect, and number. Inflectional processes do not change the syntactic category of the stem. We distinguish between nominal and verbal inflection.

A typical example of verbal inflection is verb agreement, which defines the syntactic relation between the verb and its arguments. In general, verb agreement in sign languages consists in the association of specific points of the signing space (called loci) to the arguments of the verbs. The verb sign marks agreement by modifying its starting and ending point as to correspond to the loci assigned to arguments.

Verbal inflection in LIS was investigated by Corazza (2000). As in other sign languages, morphological agreement, namely the possibility of modifying some segments of the verb stem to overtly show agreement, can be encoded only by a subset of verbs. These are agreement and spatial verbs. On the other hand, body anchored verbs (also called plain verbs) cannot be inflected to show overt morphological agreement with the arguments because they are articulated on the body. To be more specific, plain verbs display only one point of articulation, close to or on the signer's body. The verb can be marked by dedicated non-manual markers such as head tilt or a shift of the body towards the locus dedicated to the subject in order to further specify agreement non-manually.

[9] These sections do not intend to be exhaustive. For further information about LIS morphology and other grammatical properties the reader is referred to Volterra (2004); Cardinaletti, Cecchetto & Donati (2011).

Agreement verbs, instead, display one or two points of articulation in the signing space connected by path movement, and mark agreement by (i) movement and orientation, (ii) movement alone, or (iii) orientation alone. I provide an illustrative example in (27). The verb GIVE in LIS is a ditransitive verb with two points of articulation in the signing space, which marks agreement by path movement. By modifying the starting and/or ending position of the movement, it can encode overt morphological agreement with its arguments. In (27), the sign GIVE starts from the contralateral side of the signer, associated with the subject, to be directed towards the ipsilateral side, associated with the indirect object, in order to convey that someone is giving something to another person.

(27) $_{3a}$GIVE$_{3b}$
'She gives her.' [SHLISG-4-3_1]

Verbs can also display morphological modifications to encode tense and aspect (Zucchi 2009; Zucchi et al. 2010).

Nominal inflection in LIS was investigated by Pizzuto & Corazza (1996). As for verbs, nominal inflection depends on the class the noun belongs to. Specifically, in LIS we distinguish between inflectional and invariable nouns: the former are articulated in the signing space and allow morphological modifications to encode plurality. Invariable nouns, instead, are articulated close to or on the signer's body and thus do not display overt morphological inflection. For instance, the sign PERSON (28) is an inflectional noun and can convey plurality by being reduplicated and articulated as a two-handed sign. Simultaneous reduplication by the non-dominant hand is a peculiar strategy for nominal inflection. This is illustrated below.

(28) PERSON++

'Persons' [SHLISG-4-1_1]

2.4.2 Derivational morphology

Derivational morphology refers to word formation processes involving (i) the concatenation of bound morphemes (i.e. affixes) to a stem (derivation) (ii) the combination of free morphemes (compounding), or (iii) the repetition of some segments of the stem to derive new lexemes (reduplication). I will briefly consider compounding and derivation since they are morphological processes discussed in this dissertation.

Compounding is a word formation process consisting in the combination of two free lexemes, whose resulting form constitutes a single lexical unit. The meaning of the final form can either result from the meanings of the two stems (endocentric compound) or not (exocentric compounds). Compounding can sometimes function as derivation to derive new lexemes from an existing one. The members of compounds in sign languages are manual signs which can either be juxtaposed (sequential compounds) or articulated at the same time by the two hands (simultaneous compounds) (Meir et al. 2010). As a consequence, it can be difficult to distinguish between simultaneous compounds and single signs, and between compounds and phrases. In the first case, a simultaneous compound can be recognised in that (i) it can violate the *handshape change constraint*, which imposes a sign to maintain the same number of selected fingers throughout the articulation, and/or (ii) it can violate the *symmetry condition* (Battison 1978), which imposes on two-handed symmetrical signs that the two hands are identical and move in the same or mirrored manner. On the other hand, sequential compounds are distinct from phrases in that (i) members of the compound cannot be modified, (ii) the members of the compound cannot be separated by intervening lexical material, and (iii) there is phonological reduction between the members of the compound, as well as different stress and rhythm patterns (Klima & Bellugi 1979; Meir et al. 2010; Quer et al. 2017), thus it seems to be a single sign instead of two. An example of a LIS compound is provided below.

[torta]

(29) SWEET^SASS (curved open L): 'round'

'Cake' [GA_gj_cake]

As can be inferred from the example, the sign CAKE results from the combination of the sign SWEET with a SASS for shape. What makes this sign a compound is that (i) the SASS would not change if the cake was square, (ii) there is phonological reduction between the two members, and (iii) the mouthing of the Italian word for cake '*torta*' spreads on both signs thus combining them into a single lexical unit. See Santoro (2018) for further details about compounds in LIS.

In general, compounding differs from derivation in that it involves the combination of free stems to create new lexemes. Derivation, instead, is a morphological process involving the addition of a bound morpheme (affix) to a stem in order to derive a new lexeme from an existing one. Derivation in LIS, and in sign languages in general, exploits both sequential and simultaneous strategies. I discuss the two in turn.

2.4.2.1 Sequential derivation

Sequential derivation in sign languages consists in the concatenation of a phonological segment to a stem. In order to be a bound morpheme, this segment must not be able to occur alone and, consequently, it cannot be divided from the base by other lexical material. In order to be a derivational affix, the segment must encode a specific meaning and function, and be productive, which means that it must be able to attach to bases belonging to different categories (nouns, verbs, adjectives).

Sequential morphemes are very rare in sign languages. Meir (2006), while investigating questions and negations in Israeli Sign Language (ISL), defines some criteria to recognise a manual suffix. First, the form is phonologically constrained by the form of the base sign; the suffix must display a shorter movement with respect to the lexical sign from which it has grammaticalised. Moreover, it must occur with different bases. The resulting construction is a morphologically complex sign behaving like a single lexical unit.

In LIS, this seems to be the case for the intensive form of the sign BEAUTIFUL. The intensive is realised by adding the suffix I gloss '-INT' to the sign BEAUTIFUL (30), in order to derive the meaning 'really beautiful'. As example (31) shows, the presence of the suffix reduces the articulation of the stem and yields the intensive meaning.

(30) BEAUTIFUL [SHLISG-4-2_1_1]

(31) BEAUTIFUL-INT
'Really beautiful' [SHLISG-4-2_1_1]

However, this seems to be the only sequential derivational process attested in LIS. This is not surprising if, as Aronoff et al. (2004) assume, grammaticalisation from free morphemes takes time and LIS, as other sign languages, is considered a young language.[10]

Conversely, simultaneous processes of derivation are much more frequent. I explore them in the following section.

[10] See Aronoff et al. (2004; 2005) for further examples of sequential morphemes in ASL and ISL.

2.4.2.2 Simultaneous derivation

As already briefly introduced, simultaneous processes in sign languages come in two types. They can affect the manual sign, consisting in modifications of the phonological segments of the sign (stem modification); alternatively, they can be encoded non-manually, by means of the simultaneous articulation of dedicated non-manual markers with the manual sign.

Simultaneous derivation exploits both processes. In both instances, the morphological modifications derive a new lexeme, sometimes changing the lexical category of the base (for instance, in the derivation of nouns from verbal signs) or not (intensive of adjectives or evaluatives on nouns).

In LIS, stem modification rarely occurs on its own. In other words, simultaneous derivation processes are often the combination of manual and non-manual markers. This is well visible in the alternation attenuative-intensive of gradable adjectives such as COLD. Compare the examples below: (32) illustrates the low degree of coldness on the semantic scale of the adjective; in contrast, (33) shows how LIS marks a high degree on the semantic scale (Franchi 2004).

ht+fe+lp

(32) COLD

'Not very cold'

[SHLISG-4-2_1_2_2]

fe+sq

(33) COLD

'Very cold'

[SHLISG-4-2_2_2]

As the examples show, attenuation in LIS (32) is conveyed through non-manual markers consisting of furrowed eyebrows ('fe'), lips protrusion ('lp') and a head tilt left- or rightwards ('ht'). The manual sign encodes morphological modification on the movement parameter: it is slightly held at the beginning, and the articulation is faster and reduced.

On the other hand, the intensive counterpart (33) is conveyed through furrowed eyebrows and squinted eyes ('sq'). Stem modification affects the movement parameter: the sign is slightly held at the beginning and the articulation is slower. It can be larger or reduced depending on the adjective. Interestingly, the manual modification is present also to convey intensive of colour adjectives (34), but it is associated with raised eyebrows ('re') and wide-open eyes ('we').

re+we

(34) RED

'Bright red' [SHLISG-4-2_2_2]

Other examples of simultaneous derivation by means of non-manual markers involve noun-verb pairs. For instance, in (35) the verb DRIVE is distinguished from the noun DRIVER (36) by means of non-manual markers consisting in puffed cheeks ('pc') and lips protrusion.

pc+lp

(35) DRIVE

'To drive'

[SHLISG-4-2_1_1_1]

(36) DRIVER

[SHLISG-4-2_1_1_1]

In the same vein, some adjectives allow to derive their negative counterpart by being marked by headshake ('hs') alone, which is the typical marker of negation usually occurring with negative particles (Geraci 2006). In (37) it modifies the adjective SATISFIED to yield the meaning 'unsatisfied'.

          hs
(37) SATISFIED
'Unsatisfied' [SHLISG-4-2_1_1_2]

2.4.2.3 Evaluative morphology in sign languages

Among derivational processes attested cross-linguistically, we find evaluative morphology. As discussed in detail in Chapter 1, evaluative morphology refers to the morphological processes conveying an alteration of quality or quantity with respect to a standard, to express the semantic primitives BIG/SMALL, GOOD/BAD. To this domain belong morphemes encoding diminution, intensification, augmentation, attenuation, endearment and contempt. Languages vary as for the morphemes they are endowed with (for instance, some languages do not have morphemes dedicated to diminutive features). In the majority of languages, evaluative morphology is a derivational (i.e. lexical) phenomenon, since its presence is not syntactically constrained, nor does it carry syntactic features. Rather, evaluative morphemes derive new lexemes defining a new semantic concept.

As far as sign languages are concerned, processes conveying evaluation through morphological means have only sparsely been mentioned (see Sutton-Spence & Woll 1999 for BSL; Tomaszewski & Farris 2010 for PJM; Schnepp 2011 for ASL). For instance, Pfau and Quer (2010) refer to the possibility found in German Sign Language (Deutsche Gebärdensprache, DGS) of conveying diminution and augmentation through non-manual markers: sucked-in cheeks and puffed cheeks, respectively. They indicate the occurrence of the dedicated NMMs by using brackets: ')(' for diminution, '()' for augmentation. I provide the examples below (Pfau & Quer 2010: 388).

                    ______)(
(38) POSS$_1$ FRIEND HOUSE BUY
'My friend bought a small house.'

                    ____()
(39) TODAY MAN TREE INDEX$_3$ CUT_WITH_SAW$_3$
'Today the man will cut down the huge tree.'

The two examples do not contain adjectives. [size] is conveyed by means of non-manual markers alone. The authors state that these non-manual markers are non-manual adjectives, whose manual part has been dropped, in that they are usually lexically specified for the signs BIG and SMALL. Crucially, I will show that this is not the case in LIS. LIS is endowed with dedicated non-manuals encoding diminution and augmentation, namely a difference in size with respect to the standard. Although conveying adjectival information, these NMMs do not have a manual part that has been dropped, as the adjectives BIG and SMALL in LIS are not lexically specified for the non-manuals detected as evaluative.

A preliminary study addressing evaluative morphological strategies in sign languages, with special reference to LIS, is the one developed by Petitta, Di Renzo & Chiari (2015). The authors account for the occurrence of both sequential and simultaneous processes employed to encode augmentation and diminution in both quality and quantity. I will describe each in turn.

i. *Manual sequential evaluation*. This is a sequential process consisting in the addition of an interactive handshape (for the authors, a tracing SASS or handle classifier) to a sign functioning as base. According to the authors, the SASSes in these structures are bound morphemes functioning as affixes, since the same classifier can occur with different bases indicating referents sharing the same features, for instance size (Petitta, Di Renzo & Chiari 2015: 159). The SASS is often marked by non-manuals. In the example below, these are teeth on lip ('tl').

                                         tl
(40) FISH SASS(unspread 5): 'big'

'Big fish' (recreated from Petitta et al. 2015: 159)

ii. *Manual simultaneous evaluation.* This process consists in the modification of the phonological parameters of the manual sign (stem modification) in order to encode features of size. Specifically, augmentation and diminution can be conveyed by (i) augmenting or reducing the distance between the hands; (ii) modifying the handshapes; or (iii) modifying the movement parameter. The examples below exemplify the change of handshape encoding diminution (41) and augmentation (42). These alterations are often combined with non-manual markers: tongue protrusion ('tp') for the diminutive, teeth on the lower lip for the augmentative.

  tp
(41) TIE

'Small tie' (recreated from Petitta et al. 2015: 160)

  tl
(42) TIE
‘Big tie’ (recreated from Petitta et al. 2015: 160)

iii. *Non-manual simultaneous evaluation*. This strategy consists in the articulation of dedicated non-manual markers to modify the base sign, which maintains its canonical form without displaying modifications. According to the authors, several non-manuals can be employed to convey diminution and augmentation. For diminution, mouth protrusion, sucked cheeks and half-protruding tongue can all convey the meaning ‘small’. Puffed cheeks, teeth on lip, slightly grinding teeth and half-frown mouth, instead, can be employed to convey the meaning ‘big’.

   tp
(43) THING
‘Small thing’ (recreated from Petitta et al. 2015: 164)

Petitta et al. (2015) argue that the semantic value of eyes-patterns in conveying augmentation and diminution is context-dependent. Therefore, they consider mouth patterns as the main articulators involved to yield diminutive and augmentative. In Chapter 4, I will show how this is confirmed in my data. Non-manual simultaneous evaluation can also be employed to encode endearment and contempt.

iv. *Reduplicative evaluation*. This is a morphological process consisting in the partial or full reduplication of the sign to convey augmentation or intensification. In the example below, we see that the duplicated part can be modified, for instance by being enlarged and marked by the mouth gesture open mouth ('om') to encode the augmentative. The authors call this strategy 'sequential reduplicative enlargement' (Petitta et al. 2015: 166).

(44) TABLE TABLE (om)

'Big table' (recreated from Petitta et al. 2015: 166)

Reduplication can also be used to convey authenticity or prototypicality.

Despite the importance of this very informative study, it offers a panoramic view of the encoding of evaluative features through morphological means in sign languages in general, without specifying the data considered and how they were collected.

In order to thoroughly investigate the nature and the display of evaluative morphology in LIS, I have developed a protocol of data collection that has allowed me to provide a systematic description of evaluative strategies, which will be described in Chapter 4.

2.5 Linguistic typology and sign languages

The morphological processes illustrated so far are important for two main reasons: (i) they show that SLs display the same processes attested in spoken languages; (ii) they account for the richness of sign languages, which is mainly due to the possibility of exploiting two or more articulators simultaneously to encode linguistic features. These considerations are made by taking into account SLs in a comparative, as well as descriptive, perspective. This is what is pursued in typological studies, which have mainly considered spoken languages so far. Crucially, linguistic investigations on sign languages have led to the creation of a new discipline, namely *sign language typology* (Zeshan 2008). Sign language research has allowed not only to increase the analyses of the different sign languages attested, but also to compare their properties by adopting the theoretical and methodological resources of linguistic typology. The results of these studies made it possible to account for both language-specific properties (modality-independent language universals) and modality-specific properties, namely those phenomena which are not attested in spoken languages because they employ a different modality. All in all, this amount of information enriches our knowledge of the language faculty. As sign linguistics, also sign language typology has registered a growing interest in the last years, developing both (i) intra-modal studies, which consider and compare different sign languages, and (ii) inter-modal studies, which compare sign languages with spoken languages.

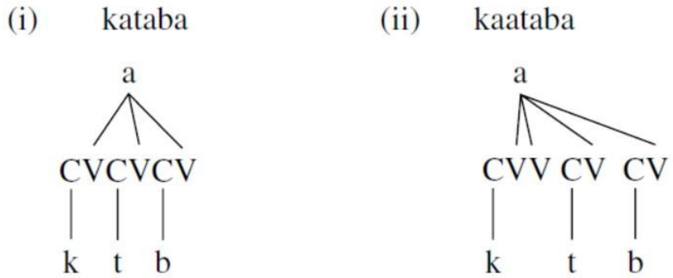
The next section (§ 2.5.1) is devoted to the studies investigating morphology of sign languages from a typological perspective. In § 2.5.2, I discuss the general importance of involving sign languages within typological studies by illustrating some analyses developed by sign language researchers so far.

2.5.1 Typological classification of sign language morphology

The description of morphological processes attested in sign languages shows that they exploit both sequential and simultaneous strategies. In so doing, they constitute a morphological type, as argued by Aronoff et al. (2004; 2005).

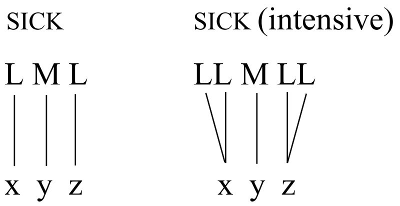
The simultaneous nature of sign language morphology has been compared to non-concatenative or templatic morphology (Sandler & Lillo-Martin 2006) found in Semitic languages (McCarthy 1979). This peculiar type of morphology involves the association of phonological segments to prosodic forms. The root consonants, specifying the semantics of the stem, and the vowels, providing grammatical information (McCarthy 1981), are associated with a specific CV template defining the order of consonants and vowels. The template is represented on a separate tier and its shape defines the morphological category of the derived word. For instance, the difference between *kataba* 'he wrote' and *kaataba* 'he corresponded' in Standard Arabic is encoded in the different templates associated with the root consonants *ktb* (bearing the meaning 'write') and the voice vowel *a*. This is illustrated below with an example taken from Sandler & Lillo-Martin (2006: 52).

(45)



Sandler (1986; 1989) assumes that the sequence of Location-Movement-Location (LML) segments, which is commonly considered as constituting the skeleton of each sign, functions as template with which specific features of location and movement are associated. Several morphological processes in sign languages conform to this template and differ among each other by altering the specifications of location and movement. For instance, intensive in ASL involves a lengthening of the first and last location, with no modification of the movement occurring in-between. The lengthening is represented as LL, therefore the morphological template for the intensive in ASL in LLMLL. I illustrate the process below with the example from Sandler & Lillo-Martin (2006: 53).

(46)



It is important to notice that templates present us with sequences of segments (i.e. timing units). The simultaneous nature of signs is captured by considering the handshape (HC) as an autosegment (i.e. a phonological unit with multiple feature specifications) which is associated with the skeletal LML, as illustrated below.

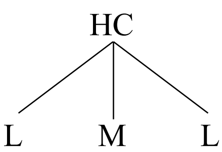


Figure 15. The structure of the sign (Sandler 1986; 1989)

Pfau (2016) adds a tier to the structure in Figure 15 dedicated to non-manual markers. As is evident from the processes illustrated in § 2.4, NMMs simultaneously occur with location and movement segments. Therefore, they are often defined 'suprasegmental markers', in the sense that they occur on a different level, but simultaneously to segmental features. For this reason, the author assumes that NMMs belong to a dedicated tier and are associated with the skeletal tier (LML), as illustrated below.

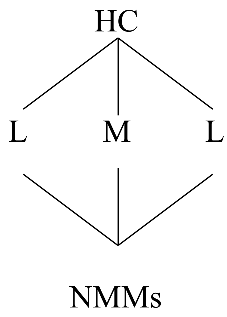


Figure 16. Non-manual tier (Pfau 2016: 20)

The suprasegmental nature of NMMs is reminiscent of tones in tonal languages, which are associated with the segmental tier and have different functions (lexical, morphological and syntactic) as well (a.o. Pfau & Quer 2010; Pfau 2016).

Schuit (2007) considers all the properties displayed by morphological processes in sign languages discussed so far (stem-internal changes, segmental and suprasegmental affixation), as well as the parallels with tonal and templatic languages, and classifies sign language morphology with respect to morphological types defined for spoken languages (§ 1.2.3.1). She argues that morphology in sign languages belongs to the agglutinative type because in all the morphological processes attested, either sequential or simultaneous, morphemes remain identifiable and segmentable. However, the author underlines the importance of distinguishing 'simultaneous agglutination', consisting in the simultaneous occurrence of different morphemes, both manual and non-manual involving stem-internal changes as well as suprasegmental affixes, from 'sequential agglutination', which is the typical affixation also attested in spoken languages. In so doing, sign languages are placed somewhere on the continuum between simultaneous and sequential agglutination. The position is defined by the *index of simultaneity* (Schuit

2007: 60), a new typological index introduced by the author to account for the amount of agglutination of a specific process. According to this index, sign languages can be classified in their being more or less agglutinative.

2.5.2 The importance of sign languages for typological studies

The studies mentioned in the previous section belong to a tradition of research that is becoming more and more common in sign language linguistics, namely sign language typology. It results from the combination of linguistic studies (sign linguistics) and linguistic typology. The studies developed within this perspective have a triple aim: (i) to map the characteristics of individual sign languages; (ii) to account for commonalities and differences among sign languages (intra-modality investigations); and (iii) to investigate whether and to what extent sign languages display the universals identified in spoken languages (inter-modality investigations). To pursue these aims, it is necessary to conduct systematic investigations taking into account several sign languages and to compare them among each other and with spoken languages. Crucially, the starting point is the documentation of individual languages in order to provide material for the cross-linguistic comparison (Zeshan 2008; Orfanidou, Woll & Morgan 2015). A good example is the description of Ugandan Sign Language (USL) realised by Lutalo-Kiingi (2014).

The first cross-linguistic study from a typological perspective was developed by Ulrike Zeshan (2004a; 2004b; 2006; 2008), and concerned interrogative and negative constructions in 37 sign languages. A further study integrating the formal with the typological perspective is Mantovan (2017), investigating the syntax of nominal modification in LIS. Specifically, Mantovan demonstrates that, despite showing a rather flexible order of modifiers within the determiner phrase (DP), all the permutations attested in LIS can actually be derived by applying the formal analysis developed by Cinque (2005) to account for word-order in spoken languages. Therefore, the study has the double merit of showing that (i) Universal 20 (Greenberg 1963) holds for LIS as well; and (ii) the way in which the orders attested are derived respects formal rules, developed considering spoken languages, despite the different modality involved. Pavlič (2016) investigates word order in Slovenian Sign Language (SZJ), whereas Zeshan and Sagara (2016) reports typological tendencies from a large cross-linguistic study investigating colour terms, numerals and kinship terms in 33 sign languages. Recently, Oomen and Pfau (2017) have investigated negation in Sign Language of the Netherlands

(Nederlandse Gebarentaal, NGT) showing that it corresponds to one of the two types detected for sign languages but also displays peculiar properties. Investigations on rural sign languages (Vos & Pfau 2015) are pointing in the same direction, revealing a higher degree of inter-modal variation than expected.

To conclude, it is important to include sign languages within typological studies for two main reasons: (i) intra-modal investigations allow to improve our knowledge of the diverse sign languages attested so far; (ii) inter-modal analyses, on the other hand, offer the opportunity to test whether the features that are claimed to be part of the innate language faculty are really universal and, thus, modality-independent. Both investigations, though, have the great merit of having demonstrated, and to still demonstrate, that sign languages are fully-fledged natural languages. On the socio-linguistic side, typological and descriptive studies are crucial for sign languages in that their documentation can help implement their knowledge and, hopefully, their official recognition by the surrounding hearing community, in order to assure Deaf people the right of using their own language.

2.6 Conclusions

The present chapter has provided general information about the lexicon and morphological processes attested in sign languages, with special reference to LIS. It shows the strong relation between the phonological structure of signs and morphological processes, as well as the relation between iconicity and the lexicon. This has been explained in light of the phonological model of reference adopted in this dissertation, and its application to account for the morphophonemic nature of classifiers.

The morphological processes explored demonstrate that sign languages display the same strategies attested in spoken languages, though with specific properties that allow to argue that SLs constitute a morphological type. This is a confirmation of the importance of involving sign languages within typological studies, since they display modality-specific properties that can enrich our knowledge of the language faculty. I have dedicated specific attention to illustrating derivational processes in order to provide the tools to understand the constructions investigated in Chapter 4.

Chapter 3. Methodological issues

3.1 Introduction

The present chapter details the methodological aspects of my research.

The protocol for data collection, annotation and analysis has been developed in accordance with the aims of my investigation, which are defined in § 3.2, and the challenges that sign language researchers usually face (§ 3.3). The two types of data that were considered are described in two separate sections: § 3.3.1 provides information about the corpus of fairy tales that I have used as the starting point for my investigation. § 3.3.2 is devoted to data elicitation: § 3.3.2.1 presents the informants involved, whereas § 3.3.2.2, § 3.3.2.3 and § 3.3.2.4 deal with the three tasks the informants have been involved in during data elicitation, namely, object description, narration and grammaticality judgments. The three sections define both the elicitation procedures and the items selected for each task. In § 3.4 I illustrate the annotation protocol I used to analyse both corpus and elicited data through the software ELAN.

3.2 Aims

The research questions defined in Chapter 1 specify the aim of this dissertation, namely to provide a description and analysis of the display of evaluative features in LIS.

In order to properly answer these questions, I needed to find out:

i. the most common strategies employed in LIS to encode evaluative features;
ii. whether LIS is endowed with dedicated non-manual markers to convey the semantic primitives BIG/SMALL, GOOD/BAD;
iii. if the NMMs detected can be considered evaluative morphemes in evaluative constructions;
iv. whether the SASSes mentioned in the general description by Petitta et al. (2015) do function as bound morphemes as claimed by the authors (§ 2.4.2.3);
v. if the occurrence of both NMMs and SASSes is constrained to some extent.

Considering the peculiarity of the topic, which involves sign language specific elements such as non-manual markers and classifiers, it was necessary to consider both naturalistic and elicited data involving Deaf native signers with a very good competence and awareness of their native language.

The protocol of investigation that was elaborated to develop a qualitative analysis is presented in the following sections.

3.3 Data collection

When planning data collection, sign language researchers face several difficulties, both at the practical and theoretical level (Van Herreweghe & Vermeerbergen 2012; Quer & Steinbach 2019).

At the theoretical level, the challenge concerns the ability of researchers to not be influenced by the knowledge they have of the linguistic structures of spoken languages when analysing sign language data. Even though sign languages are natural and fully-fledged languages sharing many properties with spoken languages, they also display modality-specific characteristics which distinguish them from spoken languages. These properties are of fundamental importance and constitute the richness of sign languages, thus it is important to recognise and to properly describe them free from potential bias and expectations coming from the description of linguistic phenomena based on spoken languages.

At the practical level, the challenges concern data collection and analysis. The first obstacle in data collection consists in the selection of informants. It is known that sign language users show different levels of competence. This is mainly due to the fact that only about 5-10% of deaf children in the world have deaf parents and are exposed to sign language since birth, thus acquiring it in a natural and spontaneous way. The remaining 90-95% is born to hearing parents, a fact that determines a later exposure to the sign language, if any. In some lucky cases, children attend deaf schools or schools with bilingual programs. However, the lack of a full access to language from birth and during the critical period for language acquisition influences their future linguistic competence. Researchers must also be aware that some signers have a very good competence in both the sign and the national spoken language. A good competence in the spoken language, widely considered as socially more prestigious, might also influence the signers' production in the sign language.

As far as Italy is concerned, Deaf LIS users are about 40.000 (EUD 2014), but this population is highly heterogeneous. Indeed, it comprises Deaf people with Deaf parents

(8-10% of the population), Deaf people who acquired LIS later in life, hearing people who have professional or personal relationships with the Deaf community (siblings, interpreters, educators, etc.) (Cardona & Volterra 2007). In other words, it is really difficult to find 'absolute' native signers. For these reasons, it is now common to consider as nearly native: (i) Deaf people who were exposed to a sign language before the age of 3; (ii) people who have been part of the Deaf community for longer than 10 years; (iii) people who have a very good competence and awareness of their language (Mathur & Rathmann 2006; Quer & Steinbach 2019).

A second challenge regards the choice of data, corpus or elicited, to consider. Corpus data are convenient tools for linguistic research in that they are collected considering several sociolinguistic factors such as age, geographic origin, gender, education, social status (Lucas 2013). Furthermore, they usually involve large numbers of Deaf people coming from different regions of the country, thus being representative of the signers of the whole country. Therefore, they constitute a good starting point to investigate the use of linguistic structures. For Italian Sign Language, a corpus was collected in 2009 with the aim of collecting linguistic material that was (i) representative of Italian signers and (ii) rich enough to conduct quantitative analysis and explore sociolinguistic variation. The *LIS Corpus Project* (Cecchetto, Giudice & Mereghetti 2011; Geraci et al. 2011) contains data from 165 signers coming from ten different Italian cities: Bologna, Brescia, Milan, Turin, Florence, Rome, Bari, Catanzaro, Salerno and Ragusa.

Despite their unquestionable utility and importance, sometimes corpus data are not the proper data type for linguistic investigations. In fact, they include spontaneous and natural productions, but they lack negative evidence. In other words, if a specific structure is not attested within the corpus, it does not mean that it does not exist in the language under investigation. It can just be the case that at the moment of production, it did not occur during the conversation among signers. To overcome this problem, researchers design protocols to elicit specific data.

Designing elicitation tasks is one further challenge to face, in that one runs the risk of influencing the signers' production (for instance, the influence of the spoken language) and, consequently, obtain unreliable data. Elicitation techniques can include more or less controlled tasks. It is very common to use visual materials (drawings, pictures or videos) in order to avoid cross-linguistic interference from the spoken language. Some very common examples are tasks involving games of role play, story retelling or picture description (see Van Herreweghe & Vermeerbergen 2012 for more examples). Moreover, to facilitate a naturalistic and spontaneous production, it is important to involve a Deaf colleague with whom the deaf informant can converse, and to conduct the data collection in locations with which the informants are familiar (Deaf clubs, their office, etc.). These adaptations should be considered in order to reduce the influence of the 'Observer's Paradox' (Labov 1972), namely the attitude of being more accurate in our choice of linguistic structures when we are aware that someone is recording our productions.

For all the reasons considered above, it is common among sign language researchers to integrate both corpus and elicited data. In so doing, it is possible to have a more reliable dataset to analyse and develop both quantitative and qualitative investigations.

These factors were considered while planning the protocol of data collection for my research. In the next sections, I provide the details about the collected data, the informants and the annotation protocol.

3.3.1 Corpus data

As introduced in Chapter 1, evaluative features convey diminution, augmentation, intensification, attenuation, endearment and contempt encoding the semantic primitives BIG/SMALL, GOOD/BAD. The linguistic elements expressing these features can carry a polysemy of meanings, depending on the context of use and the speech act in which they are involved.

In order to investigate the possibility in LIS to express the primitives BIG/SMALL, GOOD/BAD through elements other than lexical adjectives, I selected a corpus of 22 fairy tales produced in LIS by three native signers, as a starting point for my research. The choice of this kind of data (i.e. fairy tales) is motivated by several reasons. Firstly, I considered the narrative style: fairy tales are usually very detailed in the descriptions of characters and locations and enriched with emotional overtones to better involve children, who are the main addressees of this kind of narration. In other words, they usually display many examples of evaluative morphology. Secondly, in fairy tales we find both animate and inanimate entities, which can have positive or negative connotations, possibly connected to specific sizes. Moreover, fairy tales often tell stories which are built around abstract concepts such as 'love', 'fear', 'injustice', 'good vs. bad', therefore they allow to investigate the possible encoding of abstract concepts in a sign language. In sum, fairy tales seemed to be the proper tool to consider in order to investigate the spontaneous encoding of evaluative features on nouns referring to animate and inanimate entities, but also to concrete and abstract concepts.

On the one hand, my corpus consists of 20 fairy tales produced in LIS by Claudio Baj in collaboration with *Cooperativa ALBA Onlus* (Turin) (2004). C. Baj is a 49 years old native signer from Turin. He is an active member of the Deaf community and works as LIS teacher. The title of the corpus of fairy tales is *Fiabe nel Bosco* ('Tales in the wood') and comprises both tales common to the Oral Culture and tales mainly known to the Deaf community. The titles of the tales are provided below.[11]

1. *L'albero segnante* 'The signing tree'
2. *Riccioli d'oro* 'Golden curls'
3. *La lepre e la tartaruga* 'The hare and the turtle'
4. *La volpe e la cicogna* 'The fox and the stork'
5. *Drillo piccolo coccodrillo* 'Drillo the little crocodile'
6. *La tartaruga Tobia* 'Tobia the turtle'
7. *La cicala e la formica* 'The cicada and the ant'
8. *Quando arriva la primavera?* 'When does Spring come?'
9. *Cenerentola* 'Cinderella'
10. *Il tonno e il delfino* 'The tuna and the dolphin'
11. *Giacomino e il fagiolo magico* 'Giacomino and the magic bean'
12. *Il corvo e la volpe* 'The raven and the fox'
13. *Il cane e la lepre* 'The dog and the hare'
14. *Biancaneve e i sette nani* 'Snow White and the seven dwarfs'
15. *La guardiana delle oche* 'The goose-keeper'
16. *La donnola e il gallo* 'The weasel and the rooster'
17. *I tre porcellini* 'The three piglets'
18. *Cappuccetto Rosso* 'Little Riding Hood'
19. *Il gatto con gli stivali* 'The Puss in boots'
20. *Hansel e Gretel* 'Hansel and Gretel'

[11] Translation my own.

In addition, I have considered two other fairy tales:

21. *Cenerentola Sorda* ‘Deaf Cinderella’
22. *Stella* ‘Stella’

Cenerentola Sorda (Caia 2012) is signed by Gabriele Caia, a Deaf native signer who is also one of the informants involved in the elicitation of data (see 3.3.2.1 for information). *Stella* (MPDF Onlus 2015) is produced by *Mason Perkins Deafness Fund Onlus* (Siena, Italy) and signed by Gabriella Grioli, a Deaf native signer who works as LIS teacher for children in a primary school in Rome.

These two tales are available online, and I decided to add them to the corpus in order to have the possibility of analysing how signers coming from different regions of Italy tell fairy tales.

3.3.2 Elicited data

The analysis of naturalistic data was useful to attest the possibility of conveying evaluative features through morphological means in LIS.

The second step was to confirm these occurrences in data elicited through tasks specifically designed to elicit evaluative structures. To this end, I have designed two tasks: (i) object description and (ii) narration of a picture story, which were administered to 5 Deaf native signers. For both tasks, I used visual materials (drawings) in order to avoid possible influence from Italian.

After these two tasks, informants were asked for grammaticality judgments of specific structures.

In the next sections, I will first provide information about the informants and successively describe the three tasks in turn.

3.3.2.1 Informants

The informants involved in my research are all Deaf native signers, LIS experts and active members of the Italian Deaf community. Three of them are also part of the SIGN-HUB Project (European Union’s Horizon 2020 Research and Innovation Program, Grant Agreement No 693349).

The participants come from different parts of Italy (Siracusa, Trieste, Enna and Rome) and are experienced informants in linguistic research, thus they were comfortable in front of the camera with which I recorded their productions. Nevertheless, I chose familiar environments for the recording sessions in order to make them feel completely at ease. To record their productions, I used a digital camera on a tripod.

The informant from Siracusa (Sicily, south of Italy) grew up between Verona and Padua (Veneto, north-east of Italy). He is 43 years old, his parents and siblings are Deaf. After the school years in institutes for deaf students, he got a Master's degree in Art, Music and Performing Arts at University of Bologna. He has been working as LIS teacher at Ca' Foscari University of Venice since 2011, and he actively collaborates in different European Projects regarding linguistic research on LIS and the creation of LIS teaching materials.

The signer from Trieste (Friuli Venezia Giulia, north-east of Italy), is 39 years old and his siblings are Deaf. He attended schools for the hearings but he has grown up using LIS as his first language. He got a Bachelor's degree in Educational Sciences from the University of Milan Bicocca. He has been working as LIS teacher since 2005 for classes of different levels and courses for interpreters. Since 2018, he is teacher of LIS at Ca' Foscari University of Venice.

The signer from Enna (Sicily, south of Italy) is 35 years old and now lives in Verona (Veneto, north-east of Italy). He works as an actor in theatre and LIS teacher. The members of his family are all Deaf, thus he has been exposed to LIS since birth, and LIS is his everyday language. He attended institutes for deaf students and a school of theatre in the north of Italy.

The two informants from Rome are women aged 41 and 43, respectively. They both work as LIS teachers and grew up using LIS as their first language.

3.3.2.2 Object description task

The aim of this task is to investigate how exactly the morphology of the same sign can change in order to convey different evaluative features. I chose 10 objects whose corresponding signs are representative as they display different phonological features. More specifically, for the selection of the objects, I considered three parameters of the sign: (i) number of hands (one- vs. two-handed signs); (ii) place of articulation (POA); (iii) movement. For two-handed signs, I also considered whether there was contact between the hands. POA includes the two broad categories of neutral space and body. As for movement, I distinguished between path and local movement (see § 2.3.1 for details about the two types of movement considered). The phonological model of reference I adopted is Brentari's (1998) *Prosodic Model*, which has guided me in both the selection of items and the subsequent morphophonological analysis of data, which I illustrate in Chapter 4. In so doing, I could investigate whether morphological modifications occurred independently from the phonological structure of the sign, or whether they were phonologically constrained to some extent.

In the table below, I provide the list of the objects (the order corresponds to the order in which they were presented to the informants) together with the phonological features considered.

	HANDS	**PLACE OF ARTICULATION**	**MOVEMENT**
CUP	one-handed	body	local
BOOK	two-handed; contact;	neutral space	local
BOX	two-handed; no contact;	neutral space	local
TABLE	two-handed; initial contact;	neutral space	path
HOUSE	two-handed; contact;	neutral space	local
CAR	two-handed; alternating; no contact;	neutral space	path
SHOE	two-handed; no contact;	neutral space	local
BACKPACK	two-handed; no contact;	body	path
BOAT	two-handed contact;	neutral space	path
DOG	one-handed	body	local

Table 8. Items for the object description task

Each object was presented to the informant in four different versions: normal size, small size, big size and in bad conditions. I avoided colours in that I was interested in the encoding of size and quality. The four versions were drawn on a sheet, and the informant was asked to produce the equivalent of each object in the picture in turn. I provide an example involving the target object 'book' below.

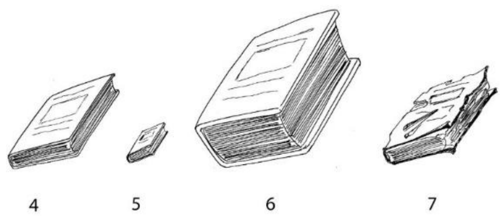


Figure 17. Some items of the object-description task[12]

I did not give indications about the use of classifiers or adjectives, since I did not want to influence their production, but rather to observe how the informants encoded the different features in the most natural way.

3.3.2.3 Narration task

The second part of my collection aimed at investigating the occurrence of evaluative strategies in a more spontaneous task of narration. To this end, I created a picture story in which I inserted both animate and inanimate referents of different size, shape and quality.

The picture story is about a poor little boy who has just a dog as friend and lives in a small and very old house. One day he finds a big book which contains the map for a treasure hidden in a castle. The boy decides to go look for the treasure, and when he finally finds the castle, after a long journey across mountains and narrow paths, the treasure turns out to be a gentle giant who offers him food and becomes his friend.

By inserting these details in the story, I aimed at eliciting both the objective features of diminution and augmentation, and the more subjective features of endearment and contempt.

The picture story was presented to the informants, who were asked to create and narrate a story. They were allowed to look at the pictures for as long as they needed to

[12] All items are provided in Appendix A1.

and to keep the pictures in front of them during the production of the story. The only instruction I gave was to pay particular attention to the details of the items included, but they were left free in being more or less detailed in their narration. I provide and excerpt of the picture story below.

Figure 18. Excerpt of the picture story from the narration task[13]

As in the object description task, the items included in the picture story were carefully chosen by considering both phonological and semantic features. Indeed, in this task I included more animate referents (the dog, the boy and the giant) in order to investigate the possibility for these nouns to encode evaluative features. As for the phonological properties, I selected objects whose corresponding signs displayed different features from the ones of the objects included in the object description task. For instance, I included one-handed signs articulated in the neutral space and two-handed signs of Type 2 (Battison 1978), namely signs in which the two hands have the same handshape but only one of them moves (i.e. it is active). The items and their features are provided below.

	HANDS	**PLACE OF ARTICULATION**	**MOVEMENT**	**REFERENT**
MAN	one-handed	body	local	animate
CHILD	one-handed	neutral space	local	animate
CHANDELIER	one-handed	neutral space	local	inanimate
STREET	two-handed; no contact;	neutral space	path	inanimate
MOUNTAIN	two-handed; final contact;	neutral space	path	inanimate

[13] The whole picture story is provided in Appendix A2.

GATE	two-handed; asymmetric;	neutral space	local	inanimate
DOOR	two-handed; asymmetric;	neutral space	local	inanimate
BOTTLE	two-handed; asymmetric;	neutral space	path and local	inanimate
WINDOW	two-handed; no contact;	body	local	inanimate

Table 9. Some items included in the narration task

In combining the phonological parameters relevant for the selection of the items, I was able to include at least one example representative of the different types of signs that compose the LIS core lexicon: one- or two-handed signs, symmetrical or asymmetrical, articulated on the body or in the neutral space, displaying local and/or path movement.

I intentionally did not include signs belonging to the non-native lexicon, such as nouns including fingerspelling, or borrowed from other sign languages. This being the first systematic analysis of the encoding of evaluative features in LIS, I wanted to focus on the core native lexicon.

3.3.2.4 Grammaticality judgments

The third elicitation task involved grammaticality judgments. Generally speaking, grammaticality judgments (also called 'acceptability judgments') are speakers/signers' reactions to sentences (Schütze & Sprouse 2014; Schütze 2016). They are very common in studies developed within the generative tradition since they directly reflect the speaker's *competence* (Chomsky 1965, § 1.2.1). To be more specific, speakers (or signers) are asked to judge whether a linguistic construction is a possible utterance of their language. The signer/speaker's response is considered to reflect the innate knowledge of the language, and thus the cognitive system underlying it. This kind of speakers/signers' intuitions allows to collect information that might not be available in corpus data or be missing in other types of elicitation tasks (i.e. not spontaneously produced). Therefore, grammaticality judgments play a crucial role in linguistic investigations of both spoken and sign languages.

For these reasons, I have included this task in my research and asked participants[14] for judgments in order to investigate: (i) the acceptability of some structures detected in the fairy tale corpus, namely the occurrence of non-manual markers to modify nouns referring to animate entities and abstract concepts; (ii) the non-manual markers occurring with the lexical adjectives BIG and SMALL. Indeed, in some sign languages these two adjectives are lexically specified for dedicated non-manual markers, which can also occur with nominal signs functioning as non-manual modifiers. In these sign languages, then, there are no non-manual markers dedicated to diminutive and augmentative features.

To pursue the first aim, I showed the informants some productions in which the signer articulates non-manual markers in combination with abstract nouns, such as SMELL, and nouns referring to animate entities, such as BEAR and WOMAN, to convey evaluative features. Then, I asked if those examples were acceptable and if they could produce other similar examples.

In order to understand whether the adjectives BIG and SMALL are lexically specified for dedicated non-manual markers, I asked informants which of the combinations in Table 10 below they would consider grammatical and why. Since LIS also has a lexical adjective for TALL, which is related to the semantic primitive BIG and encodes the feature [size] as well, I included it among the judgments and asked the informants which option they preferred.

Adjective	**Non-manual markers**
BIG	- None; - Wide open eyes, open mouth; - Furrowed eyebrows, teeth on the lower lip; - Puffed cheeks.
SMALL	- None; - Squinted eyes, tongue protrusion; - Squinted eyes, grinding teeth.
TALL	- None; - Wide open eyes, open mouth;

[14] For organisational issues, only two of the five informants participated in this task.

	- Furrowed eyebrows, teeth on the lower lip; - Puffed cheeks.

Table 10. Combinations of NMMs and adjectives investigated through grammaticality judgments

The values for the non-manual markers were selected considering those indicated by Petitta et al. (2015) as markers for 'bigness' and 'smallness' detected among sign languages (§ 2.4.2.3).

3.4 Data annotation

Corpus and elicited data have been analysed following the same protocol: data annotation, extraction and analysis. Total duration of the videos analysed is 3 hours and 32 minutes.

Annotation of the data collected was conducted by using the software ELAN (*Eudico Linguistic Annotator*) developed at the Max Plank Institute for Psycholinguistics in Nijmegen (The Netherlands) (Crasborn & Sloetjes 2008). This is a very useful tool for research on sign languages in that it allows time-aligned video annotation as well as the possibility of indicating several properties for the same sign by creating multiple tiers. Moreover, it is possible to create an annotation template which can be used for the annotation of different data.

The template for my annotations was created considering the kind of data I wanted to investigate. From the preliminary study by Petitta, Di Renzo & Chiari (2015) it results that evaluative features in sign languages are conveyed through: (i) manual sequential evaluation; (ii) manual simultaneous evaluation; (iii) non-manual simultaneous evaluation; (iv) reduplication. As explained in § 2.4.2.3, these four strategies can involve both the sign for the noun or different categories of classifiers occurring after the nominal sign. Moreover, the authors account for the occurrence of dedicated non-manual markers for each evaluative feature. Therefore, I have considered the following elements for data annotation:

i. nouns displaying a modified articulation with respect to the sign in its citation form;
ii. nouns displaying a modified articulation and marked by NMMs;

iii. nouns followed by size and shape specifiers or other categories of classifiers;
iv. nouns followed by SASSes, or other categories of classifiers, marked by NMMs;
v. nouns followed by lexical adjectives related to the semantic primitives BIG, SMALL, GOOD and BAD.

In order to be able to annotate several types of information corresponding to one single sign, I created different tiers and corresponding 'controlled vocabularies' (CVs), namely sets of entries that can be easily selected to facilitate the annotation. In the following table, I list the tiers and the corresponding CVs.

Tier	Entries of the controlled vocabularies
Lexical category	- Noun - SASS - Adjective - Whole entity classifier - Body part classifier - Handling classifier
Place of articulation	- Neutral space - Body - Non-dominant hand
Hands	- One - Two without contact - Two with contact
Movement	- Path - Local (also called secondary)
Articulation	- Enlarged - Restricted - Slower - Faster - Repeated
NMM_eyebrows	- Furrowed - Squinted - Inner brow raised

NMM_eyes	- Squinted - Open
NMM_lips	- Protruded - Teeth on the lower lip
NMM_mouth	- Open - Corners up - Corners down - Corners down with tongue protrusion - Tongue protrusion - Grinding teeth
NMM_cheeks	- Puffed - Sucked-in
Evaluative feature	- Diminutive - Augmentative - Endearment - Pejorative - Intensive - Attenuative

Table 11. Tiers and corresponding CVs for annotations with ELAN

In the figure below, I provide a representative screenshot illustrating the annotation procedure in ELAN. The blue vertical strip shows the annotations provided for the sign glossed PORTA ‘door’.

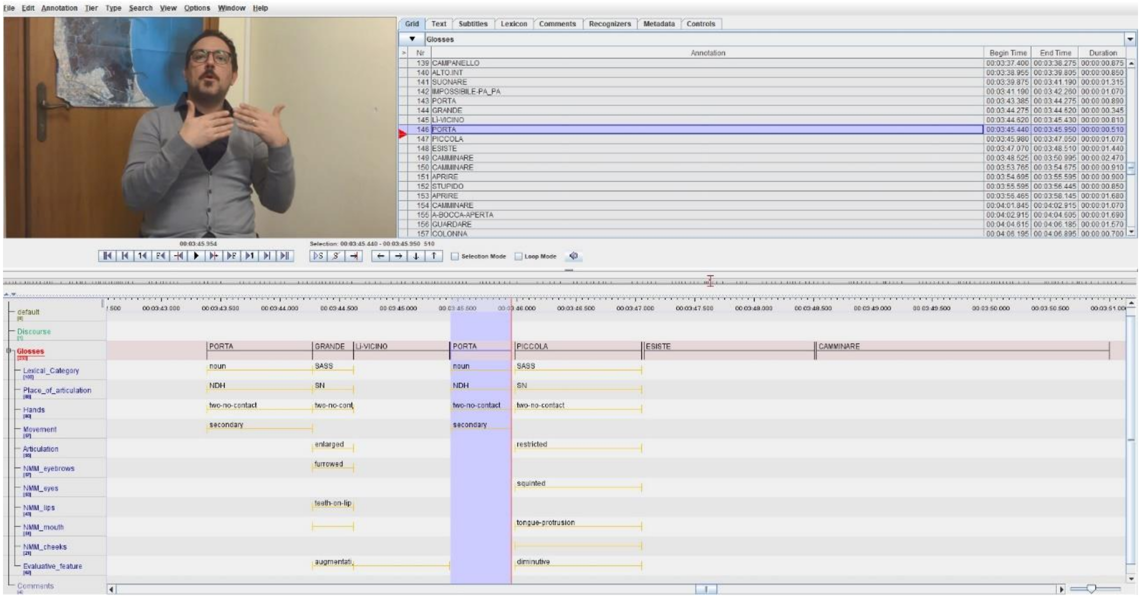


Figure 19. ELAN annotations

Successively, annotations were exported in a spreadsheet file. In so doing, I was able to develop a qualitative analysis to: (i) account for the occurrence of sequential vs. simultaneous evaluative strategies; (ii) detect the non-manual markers dedicated to each evaluative feature.

Each type of strategy produced by the informants, sequential and simultaneous, was analysed from a morphophonological perspective. In particular, I focussed on the occurrence and meaning carried by the non-manual markers as well as size and shape specifiers, which turned out to be the main elements involved in the encoding of evaluative features in my data.

The results are illustrated in the next chapter. A code containing information about the data source is provided between square brackets, on the translation line. For instance, examples from the corpus of LIS fairy tales are specified through the acronym of the corpus (LISFT), followed by the title of the fairy tale. On the other hand, the code for elicited data contains the following information: (i) the first two letters refers to the signer; (ii) the following letters refers to the task ('na' for the narration task; 'od' for the object description task; 'odS' for the task eliciting SASSes; 'gj' for grammaticality judgments); (iii) the last number either refers to the number of the test item (referring to the numeration provided in Appendix A1 and A3) in the case of examples taken from the object description tasks, or to the number of the annotation in the case of examples taken from the narration task.

3.5 Conclusions

The present chapter has presented the methodological aspects of my research.

Firstly, I have illustrated the challenges that sign language researchers usually face as far as informants, data collection and annotation are concerned, which guided me in building my protocol of investigation.

Subsequently, I have described the corpus and the elicitation procedure, specifying how the items included in the latter were selected. I have presented the native signers involved in the elicitation tasks, and finally delineated the protocol of data annotation with ELAN.

The next chapter will illustrate the results of the qualitative analysis that was conducted. Specifically, it will provide (i) the description of the strategies detected in LIS to encode evaluative features, and (ii) the morphophonological analysis of the two main elements involved, namely non-manual markers and size and shape specifiers.

Chapter 4. Evaluative constructions in LIS

4.1 Introduction

The present chapter is devoted to the description of the evaluative strategies detected in LIS, together with the morphophonological analysis of the elements involved: non-manual markers and Size and Shape Specifiers (SASSes).[15] Specifically, in § 4.2 I illustrate the two strategies identified: simultaneous evaluation (§ 4.2.1) and sequential evaluation (§ 4.2.2). Each paragraph describes and provides examples for each evaluative value. § 4.2.3 investigates the phonological constraints influencing the production of sequential strategies. § 4.3 looks at SASSes in more detail: § 4.3.1 lists the handshapes belonging to the category of SASS in LIS; § 4.3.2 provides SASSes morphophonological structure; § 4.3.3 investigates SASSes morphosyntactic properties. Finally, § 4.4 defines the typological properties of LIS evaluative constructions by taking into account the generalisations defined for evaluatives in spoken languages.

4.2 Evaluative strategies in LIS

The analysis of both corpus and elicited data, corresponding to 3 hours and 32 minutes of video annotated, was useful to investigate the encoding of evaluative features in LIS.

The presence in the data of different types of referents (animate vs. inanimate, abstract vs. concrete), whose corresponding signs display different phonological properties, allowed to observe the occurrence of specific strategies which can be explained in terms of phonological and semantic constraints.

The data set of annotation contains 338 evaluative constructions, 239 of which involve the production of a classifier (a SASS or an entity classifier), thus they constitute examples of 'sequential evaluation'. The remaining constructions (99 tokens) exploit simultaneous strategies to encode evaluative features. I will label this strategy 'simultaneous evaluation'. The percentages are reported below.

[15] Preliminary results were described in Fornasiero (2018).

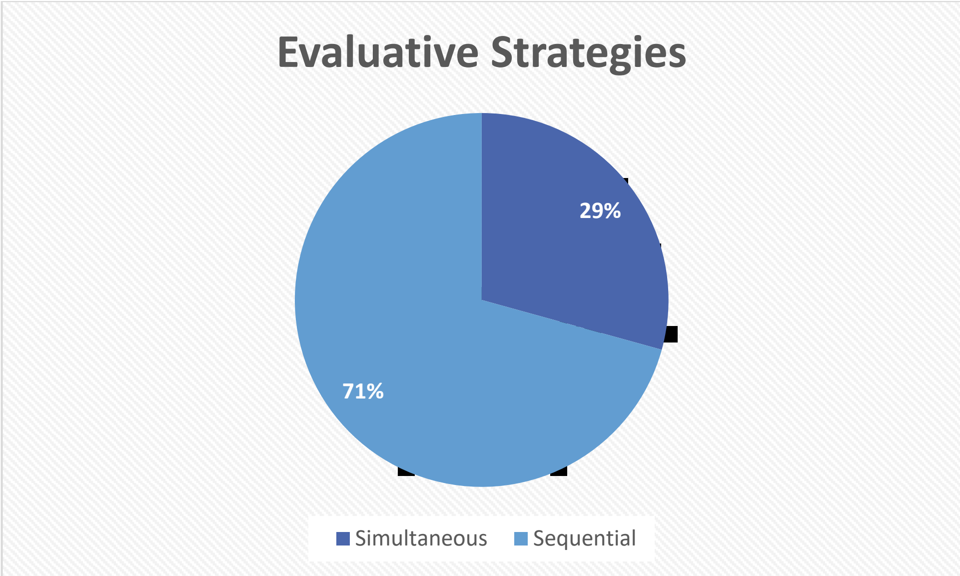


Figure 20. Evaluative strategies in LIS

Differently from Petitta et al. (2015), I did not find examples of reduplication.

The two types of evaluative constructions, simultaneous and sequential, are illustrated and exemplified in turn in the following sections.

4.2.1 Simultaneous evaluation

Generally speaking, simultaneous morphological processes in sign languages consist either in the modification of phonological segments of the manual sign (i.e. stem modification), or in the addition of dedicated non-manual markers (§ 2.4.2.2).

According to the data collected, we must distinguish between two types of simultaneous evaluation in LIS: (i) *manual simultaneous evaluation*, which displays both the addition of dedicated NMMs and phonological modifications of the manual sign functioning as base. Specifically, the manual sign can display changes involving the handshape configuration, the distance between hands and/or the movement (distalisation vs. proximalisation). These findings confirm what had previously been reported by Petitta et al. (2015); (ii) *non-manual simultaneous evaluation*, consisting in the articulation of dedicated NMMs alone to modify the manual sign, which does not display any phonological modification. As will be explained in the following sections, this alternation depends on the evaluative feature to be encoded. Crucially, each evaluative feature is expressed by dedicated non-manual markers.

4.2.1.1 Diminutive

In both corpus and elicited data, diminution is an example of manual simultaneous evaluation. To be more specific, it is conveyed through a cluster of non-manual markers involving squinted eyes ('sq') and tongue protrusion ('tp'). Simultaneously, the manual nominal sign displays phonological modifications, such as: (i) reduced distance between hands (example 47); (ii) distalisation (i.e. movement is articulated with the wrist joint rather than with the elbow (48-49)); (iii) handshape change, in (50) from unspread 5 to flat open 4 (with thumb extension); (iv) shorter path movement (51).

sq+tp

(47) CHAIR

'little chair' [LISFT_Riccioli d'oro]

sq+tp

(48) BOX

'little box' [FI_od_9]

sq+tp

(49) ROCK

'little rock' [LISFT _Stella]

sq+tp

(50) BOAT

'little boat' [MI_od_32]

sq+tp

(51) CUT++

'little cuts (on the headboard)' [MI_na_67]

As the examples show, the semantic primitive SMALL is expressed in LIS through morphological modifications involving the addition of specific non-manual markers and the articulation of the manual sign, without resorting to additional lexical adjectives.

Interestingly, the size feature can be encoded in the manual sign due to the possibility of the sign to undergo some phonological modifications. Indeed, when this is not possible the system requires the articulation of a SASS to encode [size], resulting in a sequential construction (§ 4.2.2).

It is important to notice that sometimes diminutive non-manual markers co-occurred with the sign for the adjective SMALL. As became clear during the grammaticality judgments session (§ 3.3.2.4), this only happens when it is necessary to compare two referents. As a matter of fact, the sign SMALL is articulated without diminutive features in the LIS dictionary. In other words, the non-manual markers detected to encode the diminutive, namely squinted eyes and tongue protrusion, are not lexically specified for the adjective SMALL, as illustrated below.

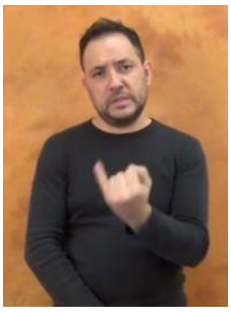


Figure 21. SMALL (www.spreadthesign.com)

Therefore, I argue that the non-manual markers identified are diminutive morphemes conveying an alteration with reference to a standard, rather than being non-manual adjectives whose manual part has been dropped, as proposed for other sign languages (Pfau & Quer 2010). Further confirmation comes from the study by Amorini & Lerose (2012: 115), who consider tongue protrusion as the marker of the minimum quantity which can occur with different signs. In other words, from the data analysed it results that LIS is endowed with dedicated non-manual markers that can be superimposed to the manual nominal sign to convey the diminutive feature.

4.2.1.2 Augmentative

In both elicited and corpus data, augmentation is expressed through furrowed eyebrows (‘fe’) and teeth on the lower lip (‘tl’). The manual sign is modified in its articulation by: (i) augmenting the distance between hands (52); (ii) proximalising the movement (i.e. the movement of the sign is articulated at the elbow or shoulder joint rather than the wrist

(53); (iii) augmenting the distance between the fingers and thumb tips, thus modifying the degree of flexion of the base joints (54-55).

All in all, augmentation is an example of manual simultaneous evaluation, as well.

fe+tl

(52) CHAIR

'big chair' [LISFT_Riccioli d'oro]

fe+tl

(53) BOX

'big box' [GA_od_10]

fe+tl

(54) FENCE_POST++

'big fence posts' [GA_na_125]

fe+lp+pc

(55) WHISKERS

'big whiskers' [LISFT_Cenerentola Sorda]

In (55) the non-manuals consist in lips protrusion ('lp') and puffed cheeks ('pc') because the signer is also conveying a quality of the character, namely a fat king. However, the size of the whiskers is expressed by modifying, i.e. enlarging, the degree of openness of the base joints of the handshape.

The examples demonstrate that LIS can encode the semantic primitive BIG through morphological means. As we saw for diminution, this morphological process seems to be allowed when the nominal sign can be modified in order to encode the size feature.

Once again, grammaticality judgments were useful to understand that the non-manual markers detected as augmentative features are not non-manual adjectives. Indeed, they are not lexically specified for the sign BIG, as exemplified below.

(56) BIG [SHLISG-3-3_4_1]

Support for this comes from Amorini & Lerose (2012: 115) who argue that the mouth gesture 'teeth on the lower lip' indicates a maximum quantity. Consequently, I conclude that LIS is also endowed with dedicated non-manual morphemes to express augmentative features.

4.2.1.3 Pejorative

Contempt is realised in LIS through furrowed eyebrows ('fe') and mouth corners down ('md'), sometimes with tongue protrusion ('tp').

fe+md

(57) GREEN

'bad looking green' [LISFT_Biancaneve]

fe+md

(58) ROOF

'broken roof' [MI_na_28]

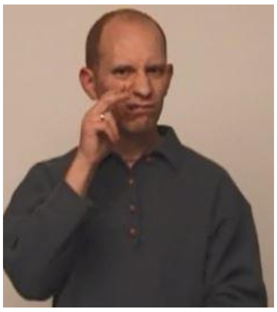
fe+md

(59) FUR

'mangy fur' [FI_od_38]

fe+md
(60) SHOE
'old broken shoe' [GA_na_93]

The same non-manual markers, namely furrowed eyebrows and mouth corners down, can be employed to encode a negative connotation. This is illustrated in (61) below: the sign for WOMAN is modified by the non-manual markers to convey the meaning 'evil' in order to describe the referent, i.e. the witch of the fairy tale *Hansel & Gretel*.



fe+md
(61) WOMAN
'evil woman' [LISFT_Hansel&Gretel]

As can be inferred from the examples, I have not detected phonological modifications of the manual signs in order to encode pejorative features. It follows that the encoding of pejorative features is an instance of non-manual simultaneous evaluation.

Once more, grammaticality judgments confirmed that the non-manuals detected are dedicated evaluative morphemes encoding the pejorative feature, rather than non-manual adjectives. As exemplified below, the primitive BAD in LIS is not specified for dedicated non-manuals.

(62) BAD [MI_gj_bad]

Therefore, as described for diminutive and augmentative features, pejorative non-manuals are employed to encode an alteration with respect to a standard by occurring with the manual nominal sign.

As for the meaning conveyed by pejorative non-manual markers to realise the semantic primitive BAD, the data suggest that it is context-dependent: furrowed eyebrows and mouth corners down can be employed to encode the meanings 'bad', 'broken', but also 'ruined/old', 'evil', with slight changes in the articulators involved. Nonetheless, informants used a great number of lexical adjectives to encode the same meanings. This is probably related to pragmatic reasons: when the signer wants to provide more details and to be more specific about the connotation of referents, (s)he articulates an adjective. This possibility was not investigated in detail and it is left for future research.

4.2.1.4 Endearment

Endearment is realised in LIS through inner brow raised ('br') (Ekman, Friesen & Hager 2002) and mouth corners slightly up ('mu'), sometimes combined with a head-tilt to the side ('ht'). I provide some examples below.

br+mu+ht

(63) BEAR

'nice/good bear' [LISFT_Riccioli d'oro]

br+mu

(64) SCENT

'pleasant scent' [LISFT_Il cane e la lepre]

br+mu+ht

(65) DOG

'good dog' [GA_na_35]

As the examples show, nominal signs do not display phonological modifications to encode endearment. Therefore, endearment is an instance of non-manual simultaneous evaluation.

Moreover, the examples provide evidence for the possibility of endearment non-manuals to occur with signs referring to both concrete (animate) and abstract referents.

The possibility of modifying nominal signs referring to abstract concepts was checked through grammaticality judgments. Specifically, I investigated the acceptance of (64), and the signer not only agreed on its grammatical status, but he also produced one further example which is reported below. (66) illustrates endearment features occurring with the sign TASTE, articulated with the dominant (right) hand, to convey the good taste of a cake (whose sign is held on the non-dominant hand).

br+mu
(66) TASTE
'good taste' [MI_gj_taste]

The examples reported above also demonstrate that the non-manuals expressing endearment can convey several meanings related to the semantic primitive GOOD, such as 'nice' and 'pleasant'. The non-manuals employed are endearment morphemes rather than non-manual adjectives since the semantic primitive GOOD in LIS is not lexically specified for inner brow raised, mouth corners slightly up and a head-tilt to the side, as shown below.

(67) GOOD [MI_gj_good]

4.2.1.5 Intensive

In Chapter 1, I illustrated the morphological processes that belong to the domain of evaluation. According to Grandi (2002; 2017; 2018) and others, intensification is one of these processes and it conveys a shift towards the positive end of the semantic scale in a qualitative (and sometimes quantitative (Grandi 2017b: 56) perspective, cf. Table 1). By conveying a deviation from the standard, intensification functions as an evaluative process which usually expresses augmentation, exaggeration or excess of a concept or quality. As is true for the other evaluative features, the process of intensification can involve different lexical categories as base words: nouns, adjectives or adverbs. Intensification in spoken languages can be conveyed either through morphological or syntactic means, namely it can be encoded through affixes or compounds (synthetic constructions), or other elements such as adverbs or adjectives (analytic constructions). The elements exploited as intensive markers belong to a specific class, which differs from that of augmentative or diminutive markers.

According to the data analysed, it seems that this holds for LIS as well. Franchi (2004) states that intensive features in LIS are expressed through the modification of the manual sign for the adjective, together with the articulation of dedicated non-manual markers. To be more specific, the sign BIG can be articulated slower and larger, and marked by open mouth ('om') in order to convey the meaning 'very big', as illustrated in (68). In the same vein, the sign SMALL is marked by protruding lips ('pl') and squinted eyes to convey the meaning 'very small'.

om
(68) BIG
'very big' (Recreated from Franchi 2004: 164)

Intensive in LIS is a morphological process that mainly applies to adjectives. In my data, this strategy is highly productive and applies both to adjectives and size and shape specifiers (see § 4.2.2.5). However, I also found a few instances of intensive non-manual morphemes modifying nominal signs. I provide one example below.

sq+om
(69) SPIRE
'very high spires' [GA_na_122]

In (69), the signer is describing the spires of a castle in the narration task. In order to convey their height, he modifies the nominal sign by adding the non-manuals squinted eyes and open mouth. Moreover, the manual sign is also modified in its articulation, specifically in its movement, by being produced very slowly and with a longer path (upwards). In other words, intensification is an instance of manual simultaneous evaluation.

According to the grammaticality judgments provided by the informants, intensive markers are employed when the signer wants to convey an absolute size. On the other hand, diminutive and augmentative markers are employed to define that something is big or small with respect to the standard.

4.2.1.6 Morphological analysis of evaluative non-manual markers

The analysis of both elicited and corpus data reveals that non-manual markers involving articulators of the face play a crucial role in encoding diminutive, augmentative, endearment, pejorative and intensive features in LIS.

As far as facial articulators are concerned, I noticed a slight difference between the non-manuals encoding diminutive and augmentative features, with respect to those expressing the more subjective features of endearment and contempt. Features of size are mainly encoded through mouth patterns: tongue protrusion vs. teeth on the lower lip to define that something is small or big, respectively. This is in line with the generalisations offered by Wilbur (2000), who argues that the articulators of the lower part of the face are involved to convey adjectival information.

On the other hand, endearment and pejorative features are mainly conveyed through the eyes/eyebrows (furrowed vs. slightly raised) and a sideward head tilt. According to Petitta, Di Renzo & Chiari (2015) the value set for the eyes (and eyebrows) is context-dependent. Therefore, we expect that the eyes would encode the more subjective features referring to feelings and emotions, rather than those expressing the more objective feature of size.

Intensification does involve non-manual markers too, but its distinctive marker is the slower articulation of the sign with respect to the citation form.

One further difference I detected between diminutive, augmentative and intensive features on the one hand, and endearment and pejorative features on the other, is that the former cannot be expressed through NMMs to modify nominal signs referring to animate entities. This will be further described in § 4.2.2.6.

I argue that the non-manual markers encoding evaluative features in LIS constitute linguistic rather than gestural units. Indeed, they respect the constraints on scope, timing, obligatoriness and muscles selection defined by Dachkovsky (2007) and Dachvosky et al. (2013):

i. their scope is constrained to linguistic domains (here the noun phrase);
ii. they display precise and rapid onset and offset, corresponding to the articulation of the lexical item functioning as base for the evaluative construction;
iii. they involve a specific subset of facial muscles;
iv. they are used consistently among different signers;
v. they are obligatory to convey the intended evaluative meaning.

As far as their morphological nature is concerned, I argue that the non-manual markers detected are non-concatenative affixes in that:

i. they are bound to the manual sign with which they simultaneously occur, i.e. they cannot occur alone;
ii. they carry a precise meaning;
iii. they are discrete, namely they involve a limited number of features;
iv. they are productive, in that they can be affixed to different bases.

Moreover, I conclude that the non-manual affixes are evaluative morphemes considering that:

i. they encode the semantic primitives BIG/SMALL, GOOD/BAD;
ii. they modify the semantics of the base sign with which they occur, thus conveying a qualitative or quantitative alteration with respect to a standard (Grandi 2002);
iii. their occurrence results in a construction respecting both the semantic and formal criteria for evaluative strategies (§ 1.3.3);
iv. as it happens with evaluative affixes in spoken languages, the occurrence of evaluative non-manual markers is constrained to some extent. When the signer articulates the mouthing of the Italian word corresponding to the manual nominal sign, the NMMs are dropped. This is illustrated below (in all cases the signers articulate the first syllable of the corresponding Italian word: [fe] for *festa* 'party' (70), [ka] for *casa,* 'house' (71) and [ba] for *barca* 'boat' (72)). Crucially, though, diminutive and augmentative features are still encoded through the phonological modification of the manual sign.

___[fe]
(70) PARTY
'big party' [LISFT_Cenerentola]

___[ca]
(71) HOUSE
'little house' [MI_od_17]

__[ba]
(72) BOAT
'big boat' [MI_od_33]

To sum up, the data collected reveal that LIS is endowed with dedicated non-manual markers functioning as evaluative morphemes, encoding the semantic primitives BIG, SMALL, GOOD and BAD. The previous sections have illustrated their occurrence with nominal signs referring to both animate and inanimate referents, as well as with nominal signs referring to abstract and concrete concepts. Furthermore, I have illustrated how LIS overcomes constraints such as mouthing through phonological modifications of the manual sign which allow to encode the feature [size] anyway.

Considering their simultaneous occurrence with the manual signs, the constructions analysed so far constitute clear examples of simultaneous evaluation.

The next section describes the sequential processes observed in the LIS data, i.e. sequential evaluation.

4.2.2 Sequential evaluation

As introduced in Chapter 2, sign languages can exploit sequential morphological processes for derivational means. Sequential morphology consists in the addition of an affix to a stem. Recall that in order to be considered an affix, the added segment must display specific properties: (i) it cannot occur alone; (ii) it carries a specific meaning or function; (iii) it is productive, namely it can attach to bases belonging to different lexical categories (nouns, verbs, adjectives); (iv) its presence implies a phonological reduction.

Keeping these properties in mind, I first describe the strategies of sequential evaluation detected in my research study and then I investigate the nature of the elements encoding diminutive and augmentative features in these constructions, namely size and shape specifiers. Indeed, strategies of sequential evaluation in the data were mainly employed to convey diminutive and augmentative features. They consist of the articulation of the sign for the noun, followed by a size and shape specifier marked by the non-manual markers detected for augmentative and diminutive features. In addition, the SASS displays the same phonological modifications affecting the nominal sign already described for manual simultaneous evaluation processes: (i) distalisation or proximalisation of movement; (ii) modified distance between the hands; (iii) modified degree of joints flexion. Interestingly, endearment and pejorative features exploited sequential strategies as well, but instead of a SASS they sometimes involved an entity classifier.

A description of the encoding of the different evaluative features through sequential processes is provided below.

4.2.2.1 Diminutive

As I have described in § 4.2.1.1, diminutive features involve dedicated non-manual morphemes consisting of squinted eyes and tongue protrusion. These NMMs can either occur with nominal signs (§ 4.2.1.1), or they can modify the sign for the SASS following the nominal sign, as illustrated below.

sq+tp

(73) BACKPACK SASS(flat open 4): 'small'

'little backpack' [FI_od_29]

sq+tp

(74) CUP SASS(flat open L): 'small'

'little cup' [MI_od_2]

sq+tp

(75) CAR SASS(unspread curved open 5): 'small'

'little car' [FI_od_21]

sq+tp

(76) DOOR SASS(flat open 4): 'small'

'little door' [GA_na_146]

sq+tp

(77) DOG SASS(unspread curved open 5): 'small'

'little dog' [GA_od_36]

sq+tp

(78) FOOD SASS(spread curved open 5): 'small'

'a little of food' [LISFT_Hansel&Gretel]

In the examples above, we see that evaluative non-manual markers are articulated simultaneously to the sign for the SASS, which displays phonological modifications to encode [size] of either animate or inanimate referents.

Among the examples, (78) deserves particular attention because, in this case, the SASS does not define the size of the referent (food), rather it defines a quantity. Indeed, it is marked by the markers for the smallest quantity as argued by Amorini & Lerose (2012). Later in the narration, the signer reduplicates the SASS together with the non-manual markers encoding diminutive features to convey plurality of the referent.

One further interesting example is provided below.

                    ________________________sq
                    ________________________[pi]
(79) BIRD SASS(flat open 4): 'small'
'little bird' [LISFT_Tartaruga Tobia]

(79) is worthy to be mentioned because (i) it is a further example of the use of a SASS to define the size of an animate referent, and (ii) it shows how the diminutive mouth gesture is dropped if the mouthing of the Italian word corresponding to the manual sign is present, as we saw in § 4.2.1.6. Here, the signer articulates the first syllable [pi] of the Italian word *piccolo* 'little', which refers to the bird. Crucially though, the size feature is encoded through the SASS, which displays a reduced articulation and is marked by the diminutive non-manual squinted eyes. Therefore, this is the same process that we observed in some instances of manual simultaneous evaluation.

4.2.2.2 Augmentative

The data reveal that the same non-manual markers employed in processes of manual simultaneous evaluation to encode augmentative features, namely furrowed eyebrows and teeth on the lower lip (§ 4.2.1.2), are also productive in sequential evaluation processes. In these cases, augmentative NMMs are articulated with the signs for the SASS, which encode the size feature displaying manual modifications. I provide some examples below.

fe+tl

(80) BOOK SASS(unspread curved open 5): 'thick'

'thick book' [FI_od_6]

fe+tl

(81) CUP SASS(spread curved open 5): 'round/big'

'big round cup' [GA_od_3]

fe+tl

(82) SHOE SASS(flat open 4): 'big'

'big shoe' [MI_od_26]

fe+tl

(83) DOOR SASS(unspread 5): 'big'

'big door' [GA_na_135]

In some cases, the nominal sign preceding the SASS can display a modified articulation as well. Let us consider example (84) below.

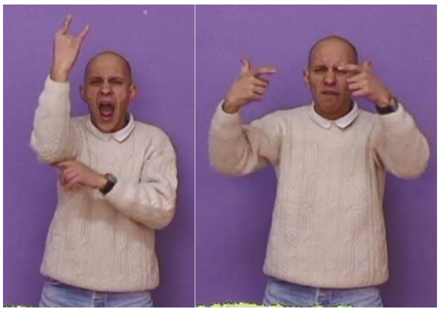
fe+tl

(84) HOUSE SASS(unspread 5): 'square big'

'big house' [MI_od_18]

(84) is peculiar with respect to (71), above. (71) was an example of manual simultaneous evaluation, in which the same signer modified the handshape of the sign HOUSE (from unspread 5 to flat open 4) in order to convey diminution. Here, the signer does not modify the configuration, rather he employs a variant of the sign HOUSE which displays path rather than local movement. In so doing, he is able to modify the manual sign by proximalisation of the movement (from elbow to shoulder). However, it seems that this is not enough to encode augmentation. In fact, the signer articulates a SASS to describe both the shape and size of the house.

Sometimes, the articulation of furrowed eyebrows encoding the augmentative already starts with the manual nominal sign. This is illustrated in (85) below: the nominal sign is only marked by furrowed eyebrows since the mouth gesture 'teeth on the lower lip' is dropped to articulate the mouthing of the first letter of the Italian word *albero* 'tree'. Furrowed eyebrows, however, occur with both the nominal sign and the SASS.



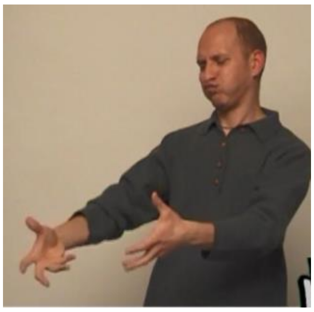
[a]

fe fe+tl

(85) TREE SASS(curved open L): ‘big’

‘big tree’ [LISFT_Lepre& tartaruga]

SASSes can be used to convey augmentation in quantity as well, as in (86).



fe+pc

(86) SASS(spread curved open 5): ‘big’ (straw)

‘a lot of straw’ [LISFT_I tre porcellini]

Interestingly, the non-manual markers occurring with the SASS defining the quantity of straw differ from those marking augmentative features and consist, instead, of furrowed eyebrows and puffed cheeks, which are used to convey abundance of a quantity as stated by Amorini & Lerose (2012: 115).

4.2.2.3 Pejorative

In the data, signers encoded contempt through non-manual simultaneous evaluation (§ 4.2.1.3) or adjectives such as ‘ruined’ or ‘ugly’. I did not find instances in which a SASS was produced and marked by pejorative non-manual morphemes to encode contempt. I argue that this is due to the fact that contempt lacks the size feature, therefore it does not need a manual element (specifically, a SASS) to encode it (see § 4.2.2.6 for discussion).

Nonetheless, often non-manual pejorative markers occurred with other categories of classifiers, such as whole entity classifiers, articulated after the nominal sign to describe the status of the referent. In the examples below, the signers mark the entity classifiers for the shutters of the window (87) and for the shoe (88), respectively, with furrowed eyebrows, mouth corners down and tongue protrusion (i.e. pejorative non-manual morphemes) in order to convey their negative denotation.

fe+tp+md

(87) WINDOW CL(unspread 5): 'shutter_be_located' CL(unspread 5): 'shutter_falling'

'One of the window shutters is broken and it is falling down.' [MI_na_30,31]

fe fe+tp+md

(88) SHOE CL(spread curved open 5): 'broken'

'The shoe is broken.' [GA_na_20,21]

4.2.2.4 Endearment

In § 4.2.1.4, I show that endearment is conveyed through non-manual markers consisting of inner brow raised and mouth corners slightly up, sometimes combined with a head-tilt to the side, simultaneously occurring with the manual nominal sign.

In the data, I did not find a dedicated manual element encoding endearment features, as SASSes do for augmentative and diminutive, in order to realise sequential evaluation to encode endearment. Nonetheless, sometimes endearment non-manuals are simultaneously articulated with the SASS defining the size of the referent. These examples are reminiscent of one typical property of diminutive markers in spoken languages, namely the possibility of encoding both objective and subjective judgments. In other words, in spoken languages diminutive morphemes commonly convey both diminutive and endearment features. This polysemy leads to ambiguity, since the same morpheme conveys different meanings (§ 1.3.2). Crucially, this seems not to be attested in LIS. Consider the example below.

br+mu

(89) BIRD SASS(unspread curved open 5): 'little'
'sweet little bird' [LISFT_Donnola&gallo]

In (89), the signer articulates the sign BIRD followed by the SASS denoting its small size. Interestingly, though, the SASS is not marked by the typical non-manual markers conveying the diminutive, namely squinted eyes and tongue protrusion. Rather, it is marked by the non-manual morphemes conveying endearment. In so doing, ambiguity of meaning usually associated with diminutive morphemes in spoken languages does not arise in LIS. Indeed, (i) diminutive and endearment NMMs are not homophonous; (ii) the possibility of exploiting both manual and non-manual articulators simultaneously allows to encode the diminutive and endearment features separately: diminution is encoded in the manual sign, which displays a reduced articulation, whereas endearment is conveyed through the non-manual markers.

These instances show how sign languages can both confirm and enrich the generalisations based on spoken languages: they are endowed with the same features but display them through modality-specific means.

(90) below is a different example but interesting as well. The signer articulates a SASS after the noun DREAM, thus making visible the shape of a noun referring to an abstract concept. Moreover, he marks it with endearment non-manuals in order to convey the positive connotation of the dream.

br+mu

(90) DREAM SASS(spread 5)

'a beautiful dream' [LISFT_Tartaruga Tobia]

4.2.2.5 Intensive

When describing occurrences of simultaneous evaluation, in § 4.2.1.5 above, I have illustrated how intensive non-manual markers involving squinted eyes/furrowed eyebrows and open mouth can co-occur with nominal signs. Other instances show the co-occurrence of intensive non-manual morphemes with size and shape specifiers following the manual sign. I provide two examples below.

fe+om

(91) TABLE SASS(unspread 5): 'tall'

'a very tall table' [LISFT_Giacomino&Fagiolo magico]

fe+om

(92) TABLE SASS(curved open L): 'long'

'a very long table' [MI_na_202,203]

Interestingly, both (91) and (92) refer to a table, but the signers convey two different size properties, the height and length respectively. What is important to notice is that, in both instances, the non-manual markers are furrowed eyebrows and open mouth, and the manual sign displays a slower and wider articulation with respect to the citation form, yielding the intensive specification.

4.2.2.6 Interim discussion

In the previous sections, I have illustrated the strategies of sequential evaluation, which mainly consist in the articulation of a size and shape specifier following the nominal sign.

Crucially, SASSes fulfil different functions. SASSes are mainly employed to convey diminutive, augmentative and intensive features. The articulation of the SASS displays the same phonological modifications and non-manual markers for diminutive, augmentative and intensive occurring with nominal signs in examples of manual simultaneous evaluation. In sequential evaluative constructions, the articulation of the SASS is necessary to encode the size feature, and sometimes to specify information of shape as well. This strategy is adopted with nouns referring to both animate and inanimate entities. Similarly, SASSes have been produced following abstract nouns, such as DREAM (90). In these instances, the SASS loses its function of conveying the size and shape of the referent, and it just allows to make visible something that otherwise would not be possible to perceive. We will get back to this below. One further function attested is the possibility of conveying a quantity, rather than describing the size and shape of the referent. Other occurrences of SASSes marked by endearment non-manuals are interesting examples in that they allow to see how different articulators can convey different features, namely size and endearment, resolving the ambiguity due to polysemy attested in spoken languages. This is a privilege of languages in the visuo-gestural modality. Pejorative features, instead, occurred with whole entity classifiers describing the status of the referent.

§ 4.2.1 and § 4.2.2 have illustrated the strategies adopted in LIS in order to encode evaluative features. Besides the interesting morphological processes involved, namely the simultaneous occurrence of dedicated non-manual morphemes with the alteration of manual signs (i.e. manual simultaneous evaluation), what deserves to be further investigated is the high percentage of sequential constructions detected. This is unexpected considering that, usually, sequential processes are rarer than simultaneous processes in sign languages. Therefore, it would be interesting to understand the underlying reasons, if any. I have already mentioned that sequential evaluation was mainly employed to encode diminutive and augmentative features, which share the feature [size]. The intuition is that the SASS is necessary when the nominal sign cannot be manually modified to encode [size]. The reason of the lack of manual modification for these signs can either be semantic or phonological. Data show that a semantic constraint is indeed at play: nominal signs referring to animate entities in the data were always followed by SASSes to convey diminution or augmentation. For the other instances, I needed to verify whether phonological constraints were at play. To this end, I have analysed all instances of sequential evaluation employed to encode diminutive and augmentative features and investigated the phonological structure of the nouns with which SASSes occur. I then compared these signs with those allowing manual simultaneous evaluation, following Brentari's (1998) model. I illustrate the analysis below.

4.2.3 Phonological constraints

As explained in Chapter 3, the items included in the elicitation tasks were selected considering three main features: (i) number or articulators (one-handed vs. two-handed signs); (ii) place of articulation (on the body or in the neutral space); (iii) type of movement, local or path. From a first glance at the data, it was already clear that the analysis would need to be more accurate and to consider more specific features. As a matter of fact, BOOK and BOAT are two-handed signs articulated in the neutral space with a contact between hands. However, BOAT allows manual simultaneous evaluation while BOOK does not.

In order to be able to account for the phonological features, if any, influencing the strategy for evaluation adopted, and to explain the differences just mentioned, I needed to analyse the signs feature per feature. To this end, I analysed the phonological structure of signs allowing manual simultaneous evaluation and of those requiring the production of a SASS, with the help of Brentari's (1998) Prosodic Model.

Before illustrating the data, some details about the phonological model are needed in order to understand the structures (more general information is provided in § 2.3.1).

i. The line connecting H2 (non-dominant hand) to H1 (dominant hand) indicates that the two hands share the same prosodic features (i.e. movement). If no line is present between the hands, it means that H2 has access only to inherent features (Brentari 1998: 262);
ii. The feature [contact] indicates both the contact between the two hands or the contact with the body. In the first case, the feature is specified at the articulator node, whereas in the second case it is inserted at the POA (place of articulation) node;
iii. For open handshapes, joints specification is not provided. Closed handshapes are defined through [flexed] joints, which means that all the fingers are flexed. Flat handshapes imply the presence of the base joint (joints are [flexed] in flat closed handshapes; for flat open no specification is provided). Curved handshapes are specified for both base and non-base joints, which are [flexed] in closed curved handshapes (Brentari 1998: 107);
iv. RAFI indicates the radial side of the fingers;
v. For the handshape features of some signs, I used those provided by Aristodemo (2013).

The make-up of the phonological structure of the nominal signs revealed to be a very useful tool to catch which features of the nominal sign are crucial in determining the presence of a SASS to encode the size feature. Specifically, I detected two non-terminal features whose presence influences the possible phonological modification of the nominal sign, one belonging to the inherent branch (IF) of the structure, the other being a prosodic feature (PF). The two features are:

i. Joints and Fingers1 (IF). These two branches belong to the Selected Fingers tier (dominated by the hand node), which indicates which fingers are active during the articulation of the sign. Joints and fingers1 are the two IF branches which play a role in the data, thus allowing phonological modifications to encode the size feature. Specifically, the joints branch must have the base and/or non-base joints tiers specified and [flexed] to some extent, whereas in the fingers1 node, the thumb must display the feature [opposed], which means that it is in a plane perpendicular to the palm.
ii. Path [tracing] (PF). This is one of the features that path movements can display. It indicates a movement within a plane of articulation, without changes in orientation (i.e. local movements).

In the data, nominal signs allowing for manual simultaneous evaluation either display only one of these feature specifications or both.

The combination of joints flexed at the base or non-base with the thumb selecting the [opposed] feature accounts for the possibility of encoding [size] through phonological modifications of the handshape. Indeed, as argued by Eccarius (2008: 44), the distance between thumb and finger tips is controlled by the degree of base joints flexions, which can be modified in order to convey different sizes.

In the same vein, path movements are articulated with elbow or shoulder joints and thus allow either proximalisation or distalisation, or for modification of the duration of the path in order to encode diminution (shorter path) or augmentation (longer path).

I illustrate these findings with pairs of nominal signs: one appearing in sequential constructions and the other one allowing manual simultaneous evaluation.

I start by comparing the signs for BOOK and BOAT, which are illustrated below in their citation form.

(93) BOOK [MI_od_4]

(94) BOAT [MI_od_31]

These are two-handed signs articulated in the neutral space, displaying [contact] between the two hands. As the structures clearly show, the two signs mainly differ in prosodic features: BOOK (Figure 22) displays a repeated movement involving a change in hand orientation, indicated by the feature [supination]. On the other hand, BOAT (Figure 23) displays the simpler [straight] and [tracing] features defining the path movement. As a consequence, the sign BOAT allows proximalisation, namely it allows movement at the shoulder joint in order to convey augmentation. At the same time, this type of path movement specified for the feature [tracing] does not block the possibility of modifying the joints feature in the inherent branch of the structure, thus changing the handshape from unspread open 5 to flat open 4 in order to encode diminutive features. Since BOOK displays a change in orientation, its handshape cannot be modified.

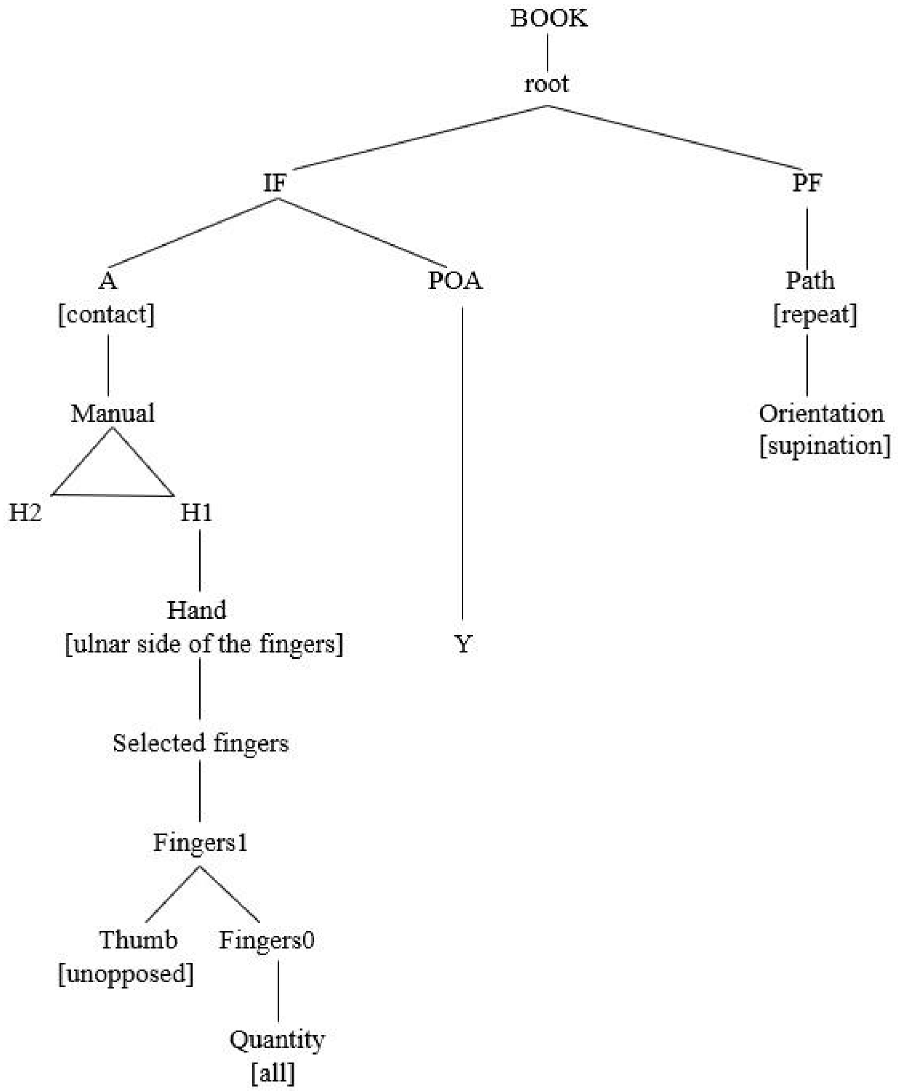


Figure 22. Prosodic Model representation of BOOK

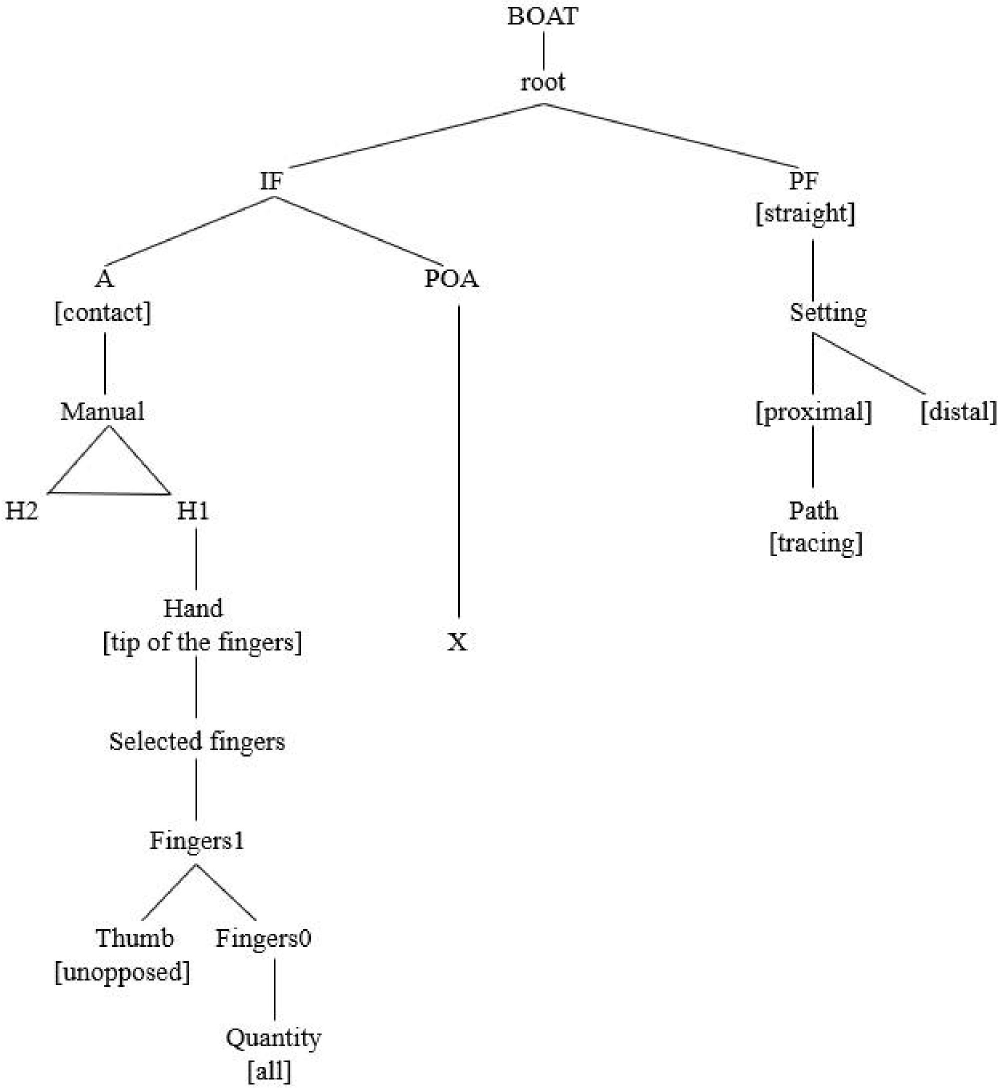


Figure 23. Prosodic Model representation of BOAT

This correctly predicts the impossibility for the sign HOUSE (in the variant illustrated in (95) below) to undergo manual simultaneous evaluation since it displays the features [repeat] and [direction] rather than [tracing] at the path node.

(95) HOUSE [FI_od_16]

To be fair, in the data one of the signers modified the configuration of the sign HOUSE to convey the diminutive. However, it was the only instance detected, and considering that the same signer later articulated a SASS to encode the augmentative for the sign HOUSE, I consider the case in (70) an exception, probably due to the repetitiveness of the task.

The contrast between the signs SHOE and CHAIR can be accounted for in the same terms. I illustrate the two signs (96-97) and their phonological structures (Figure 24 and 25) below.

(96) SHOE [MI_od_24]

(97) CHAIR [LISFT_Riccioli d'oro]

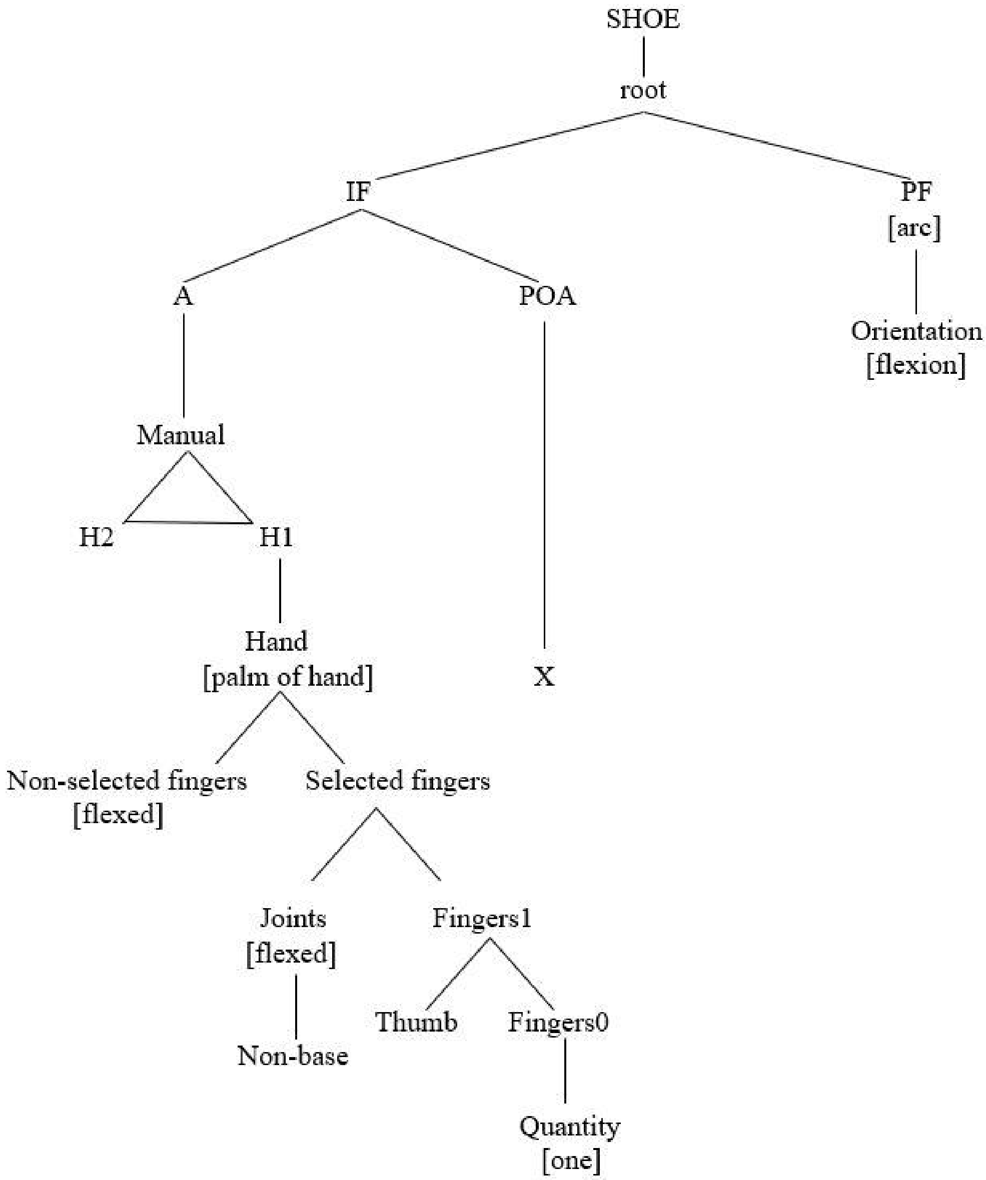


Figure 24. Prosodic Model representation of SHOE

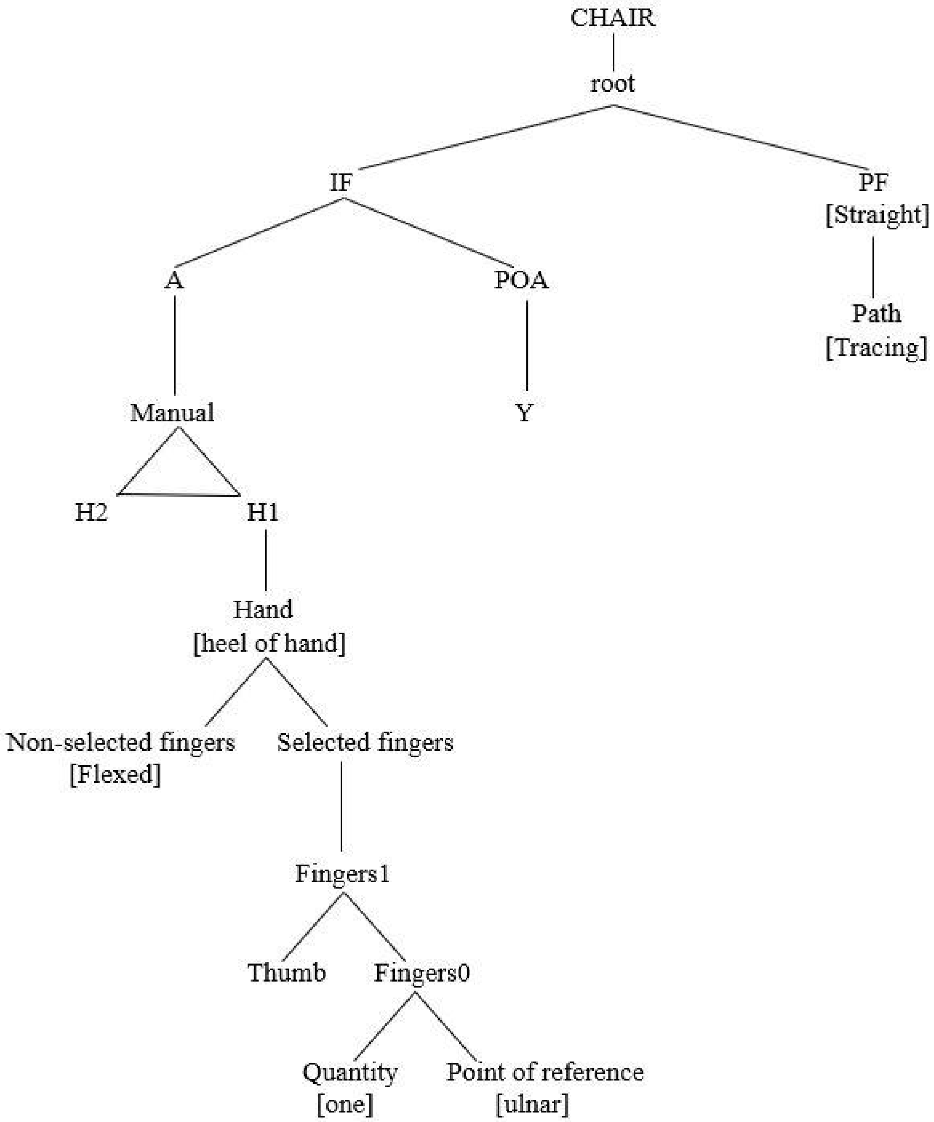


Figure 25. Prosodic Model representation of CHAIR

The signs SHOE and CHAIR (in the LIS variant of Turin) are two-handed signs articulated in the neutral space and do not display any [contact] between the two hands. The crucial features differentiating SHOE from CHAIR are located at the prosodic branch of the structure. Specifically, SHOE displays orientation [flexion], whereas CHAIR displays [tracing] movement. As a consequence, CHAIR allows for manual simultaneous evaluation whereas SHOE does not.

This predicts the impossibility for CUP (illustrated below) to allow manual simultaneous evaluation in that it displays orientation [adduction].

(98) CUP [GA_od_1]

I consider now a couple of two-handed signs which have the body as place of articulation. BACKPACK (99) is articulated on the torso and adopts sequential strategies, whereas WHISKERS (100) is articulated close to the mouth and allows manual simultaneous evaluation. The phonological structures are provided in Figure 26 and Figure 27, respectively.

(99) BACKPACK [FI_od_28]

(100) WHISKERS [LISFT_Cenerentola Sorda]

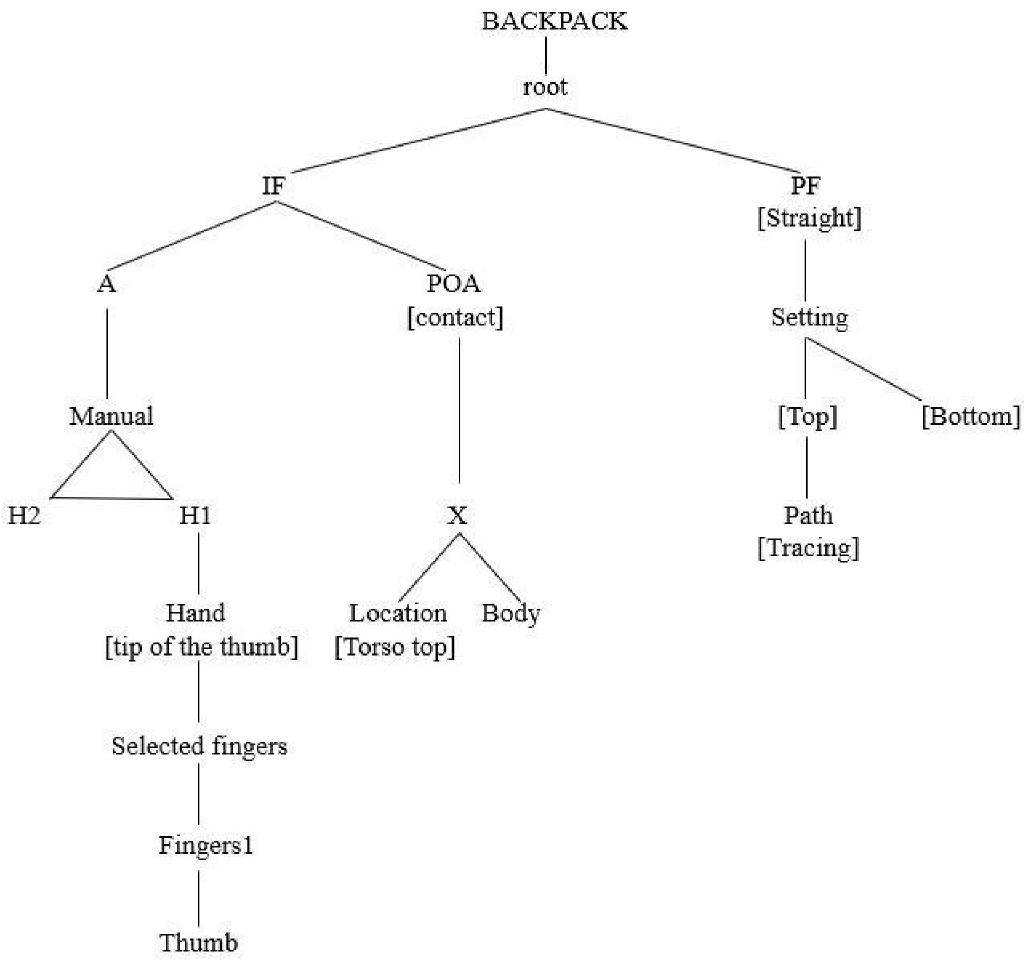


Figure 26. Prosodic Model representation of BACKPACK

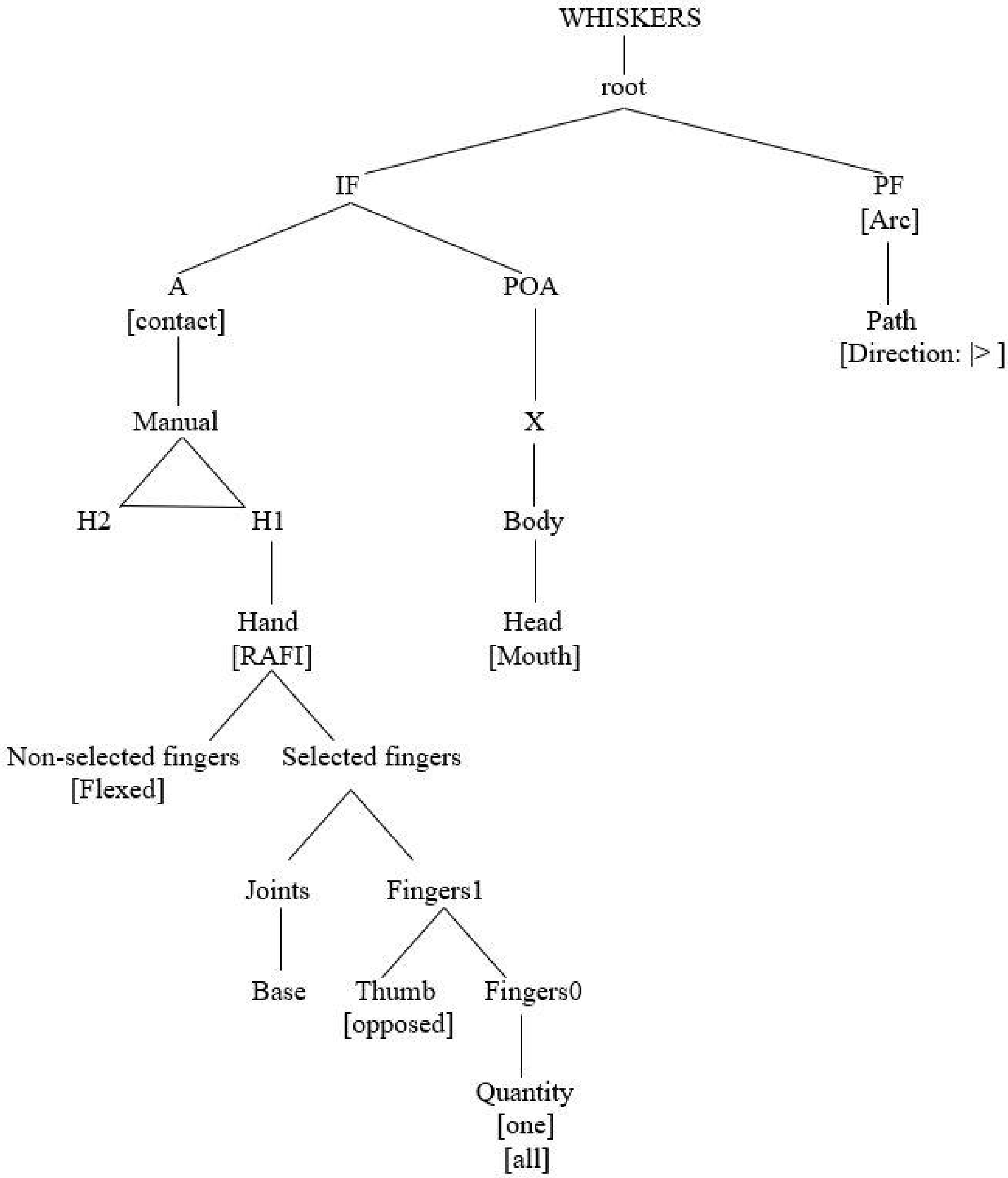


Figure 27. Prosodic Model representation of WHISKERS

In this case, we see that the body as place of articulation does not interfere with the possibility of manual simultaneous evaluation. The crucial feature in WHISKERS (Figure 27) is the selected fingers node, particularly the thumb opposition with respect to the other fingers selected. Their combination results in the flat open 3 handshape, which can convey different [size] while modifying the degree of base joint flexion. On the other hand, despite being endowed with the [tracing] feature, BACKPACK (Figure 26) does not allow for the modification of joints and, consequently, does not allow for [size] encoding.

The next pair includes one-handed signs. Consider the signs CHANDELIER (101) and FENCE_POST (102), both articulated in the neutral space (in (102) the sign is reduplicated). The phonological structures are provided in Figure 28 and Figure 29, respectively.

(101) CHANDELIER [MI_na_170]

(102) FENCE_POST [GA_na_125]

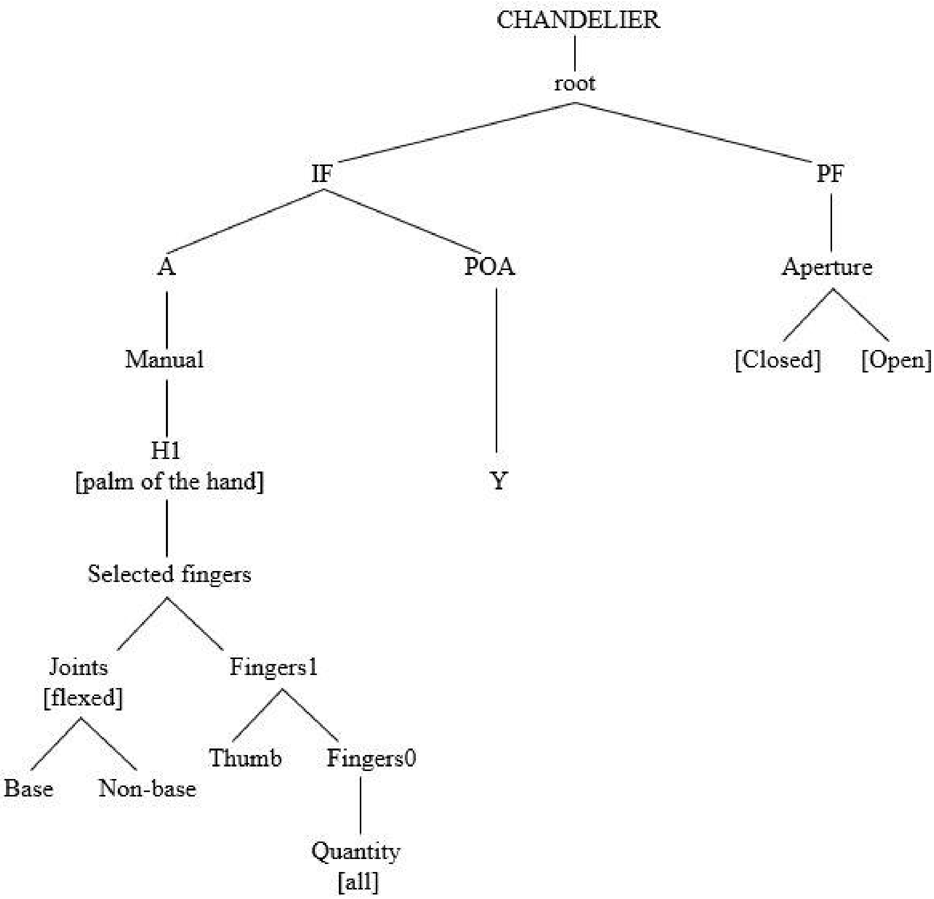


Figure 28. Prosodic Model representation of CHANDELIER

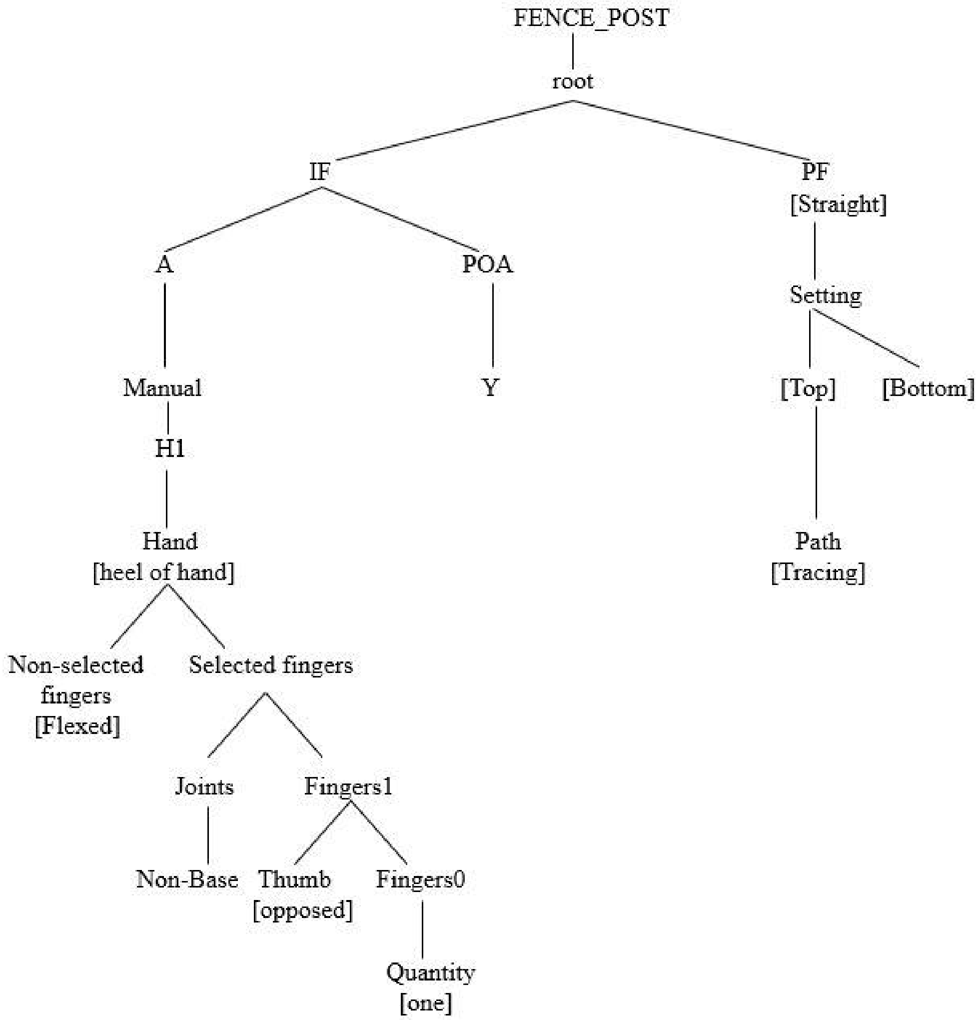


Figure 29. Prosodic Model representation of FENCE_POST

The sign FENCE_POST (Figure 29) allows for manual simultaneous evaluation in that it can augment or reduce the flexion degree of base and non-base joints. Moreover, it displays [tracing] feature, thus it can augment or reduce the path to encode size. On the other hand, CHANDELIER (Figure 28) does not display any of the two features considered.

The pairs of signs considered so far predict the impossibility for signs such as TREE (103), CAR (104) and DOOR (105) to display manual simultaneous evaluation in that: (i) TREE does not have movement, and the handshape is neither specified for joints nor for thumb; (ii) CAR is a two-handed sign with alternating movement, whose handshape could not be modified; (iii) DOOR is a Type 2 sign displaying a change in orientation (wrist flexion).

(103) TREE
[LISFT_Lepre&tartaruga]

(104) CAR
[MI_od_20]

(105) DOOR
[GA_na_135]

From the data considered, it seems that nominal signs allowing for manual simultaneous evaluation are those displaying one (or more) phonological features that can be modified to encode [size]. This can be done by joints specification or path [tracing] movement. These findings can be summarised in the following phonological constraints.

(106) Phonological constraints calling for the presence of a SASS to encode [size]:

i. One-/two-handed signs articulated on the body whose handshape does not have joints and/or thumb [opposed] specification (for instance, the signs for CUP and BACKPACK);
ii. Two-handed signs with [contact] articulated in the neutral space and displaying a change in orientation (for instance, the sign for BOOK);
iii. One-/two-handed signs articulated in the signing space displaying neither path [tracing] movement nor joint/thumb specifications (for instance, TREE, CHANDELIER, TABLE, SHOE, CAR);
iv. Type 2 signs whose prosodic features do not allow to encode the size of the referent (for instance, the sign for DOOR).

A comprehensive table indicating the strategy selected from nouns to encode evaluative features is provided below. Note that the strategy selected to encode a specific evaluative feature depends on both semantic and phonological properties of the signs.

NOMINAL SIGN	Phonological properties	Semantic properties	Evaluative feature	Evaluative strategy
CHAIR	two-handed no contact; path [tracing] movement	-animate +concrete	DIM/AUG	manual simultaneous
BOX*	two-handed no contact; orientation [flexion]	-animate +concrete	DIM/AUG	manual simultaneous
ROCK	two-handed no contact; joints specification; path [tracing] movement	-animate +concrete	DIM	manual simultaneous
BOAT	two-handed with contact; path [tracing] movement	-animate +concrete	DIM/AUG	manual simultaneous
CUT*	one-handed; path [tracing] movement	-animate +concrete	DIM	manual simultaneous
FENCE_POST	one-handed; joints specification; path [tracing] movement	-animate +concrete	AUG	manual simultaneous
WHISKERS	two-handed no contact; joints specification; path [direction] movement	-animate +concrete	AUG	manual simultaneous
SPIRE	one-handed; joints specification; path	-animate +concrete	INT	manual simultaneous

	[tracing] movement			
BENT	two-handed no contact; joints specification; path [tracing] movement	-animate +concrete	AUG	manual simultaneous
SKIRT	two-handed no contact; path [tracing] movement	-animate +concrete	AUG	manual simultaneous
BOWL	two-handed no contact; path [tracing] movement	-animate +concrete	DIM/AUG	manual simultaneous
GREEN	one handed; aperture change	-animate -concrete	PEJ	non-manual simultaneous
ROOF	two handed with initial contact; path [direction] movement	-animate +concrete	PEJ	non-manual simultaneous
FUR	two handed no contact; aperture change	-animate +concrete	PEJ	non-manual simultaneous
SHOE	two-handed no contact; orientation [flexion]	-animate +concrete	PEJ	non-manual simultaneous
			DIM/AUG	sequential
WOMAN	one handed; orientation [flexion]	+animate +concrete	PEJ	non-manual simultaneous

BEAR	two handed no contact; circle movement	+animate +concrete	END	non-manual simultaneous
MUM	one-handed; repeated movement	+animate +concrete	END	non-manual simultaneous
SCENT	one handed; [trilled] movement	-animate -concrete	END	non-manual simultaneous
DOG	one handed; repeated movement; orientation [abduction]	+animate +concrete	END/PEJ	non-manual simultaneous
			DIM	sequential
TASTE	one handed; [trilled] movement	-animate -concrete	END	non-manual simultaneous
SISTER	type 2; circle movement	+animate +concrete	PEJ	non-manual simultaneous
BACKPACK	two-handed no contact; no joints specification; path [tracing] movement	-animate +concrete	DIM/AUG	sequential
CUP	one-handed; orientation [adduction]	-animate +concrete	DIM/AUG	sequential
CAR	two-handed no contact; path [alternating] movement	-animate +concrete	DIM/AUG	sequential
DOOR	type 2 no contact; orientation [flexion]	-animate +concrete	DIM/AUG	sequential

BIRD	one-handed; orientation [flexion]	+animate +concrete	DIM	sequential
BOOK	two-handed with contact; orientation [supination]	-animate +concrete	DIM/AUG	sequential
TREE	one-handed; no movement; no joints/thumb specification	-animate +concrete	AUG	sequential
WINDOW	two-handed no contact; orientation [flexion]	-animate +concrete	PEJ	sequential
DREAM	one-handed; circle movement	-animate -concrete	END	sequential
TABLE	two-handed with initial contact; path [direction]	-animate +concrete	INT	sequential
HOUSE	two-handed with contact; repeated movement; path [direction]	-animate +concrete	DIM/AUG	sequential
CHANDELIER	one-handed; aperture change	-animate +concrete	AUG	sequential
EYE/EAR	one-handed; no movement; no joints/thumb specification	-animate +concrete	AUG	sequential
MOUSE	one handed; no joints specification	+animate +concrete	DIM	sequential
BED	one-handed; no movement; no	-animate +concrete	DIM	sequential

	joints/thumb specification			
CAKE	compound	-animate +concrete	AUG	sequential
CHICKEN	one handed; repeated movement; orientation [abduction]	+animate +concrete	AUG	sequential

Table 12. Combinations of nouns and evaluative strategies detected in the data.

A couple of signs (indicated with * in the table) seem to contradict the phonological constraints formulated in (106) in their allowing for manual simultaneous evaluation. Indeed, BOX displays orientation [flexion], and CUT has path [tracing] movement but no joints specification. These instances find an explanation if we also consider the issue from a more cognitive-like perspective, as discussed in the following section.

4.2.3.1 A modality-specific alternative

The alternation between sequential evaluation and manual simultaneous evaluation to encode diminutive and augmentative features can also be explained by tackling the issue from a cognitive perspective. Recall from Chapter 1 that Cognitivism investigates the linguistic realisation of some universal concepts, which can be conveyed because they can be perceived. Among these, size is considered a primitive concept, wired in the human nature in that it can be bodily encoded (embodied cognition).

Let us consider the nominal signs allowing for manual simultaneous evaluation: BOX, CHAIR, CUT, BOAT, ROCK, FENCE-POST, WHISKERS, SPIRE. These signs have one characteristic in common, namely they define their referents by depicting their perimeter (BOX, BOAT, ROCK, FENCE-POST, WHISKERS, SPIRE), or one dimension (for instance, the sign CHAIR encodes the size of the seat, the sign CUT describes its size). In contrast, nominal signs which do not allow to encode [size] through phonological modifications define their referent by selecting different properties, more or less arbitrarily. For instance, the sign for SHOE reminds the act of putting shoes on; the sign for CAR refers to the act of grasping the steering wheel; the sign DOOR encodes the movement of the door while opening and closing; the sign for BACKPACK refers to the shoulder straps rather than to the size of the backpack; the sign for CHANDELIER conveys the light switching on rather than the size or shape of the object; the sign for BOOK resembles the cover rather than its thickness or size. Crucially, both nouns allowing for manual simultaneous evaluation and those that do not display a certain degree of iconicity. Therefore, we safely exclude that the reason for allowing manual simultaneous evaluation is that it is only possible in more iconic signs.

The difference lies in the possibility of encoding the size feature. Consequently, those nominal signs representing other features of their referents need a SASS to convey size. This possibility is strictly sign language specific. By employing manual articulators, sign languages do have the possibility of visually encoding some abstract concepts. What is crucial is that the visual encoding that SLs allow is governed by linguistic constraints, namely those mentioned above. Therefore, we do find linguistic regularities even though the main reason is possibly the visual embodiment of size.

I argue that this is the point in which Generativism and Cognitivism can meet, since we are dealing with a universal and innate feature, i.e. size, which is embodied because the language allows to do that. By combining these two perspectives, we can gain a complete picture of the phenomenon, a reasoning also followed by Sandler (2018). Borghi et al. (2014) reach the same conclusion while showing the different degrees of embodiment of abstract concepts in LIS. Specifically, they explain that sensorimotor and emotional experience are not enough to account for the encoding of abstract concepts in LIS, since linguistic information plays a crucial role in the process as well. The issue of concept embodiment in sign languages is even more visible when we consider classifiers. As far as [size] is concerned, later in the chapter, I show that SASSes represent a further example of concept encoding through linguistic means. As a matter of fact, the encoding of size is gradient, but it is done by employing categorical and linguistic elements which belong to the sign language lexicon.

Before tackling the issue of size embodiment in SASSes, I need to take one step back. In § 4.2.3, I have illustrated the constraints that disallow some nominal signs to undergo manual simultaneous evaluation. In such instances, a SASS is articulated in order to encode [size]. Before going through other investigations, we need to understand the nature and function of SASSes in LIS. The literature on LIS classifiers does mention a category of 'descriptive classifiers' (Corazza 1990) or 'extension and surface classifiers'

(Mazzoni 2008), however, their nature and function are not investigated in detail (§ 2.2.4.1). In order to fill the gap, I propose an analysis of SASSes in LIS, which is presented in the following sections.

4.3 Investigating Size and Shape Specifiers in LIS

As I have illustrated in the previous sections, the analysis of the data collected to investigate evaluative strategies in LIS reveals that LIS is endowed with dedicated non-manual markers for each evaluative feature, which can either occur (i) with nominal signs displaying a modified articulation (manual simultaneous evaluation), or (ii) with size and shape specifiers following nominal signs and displaying the same phonological modifications (sequential evaluation). The articulation of SASSes is necessary to convey diminutive and augmentative features. The analysis of the phonological structure of the nouns appearing in sequential constructions reveals that SASSes are needed to encode the feature of size when the nominal signs cannot encode it.

As introduced in § 2.2.4, the most recent analysis of classifiers in LIS is the one by Mazzoni (2008), who follows the classification proposed by Engberg-Pedersen (1993) and distinguishes between: (i) Whole entity classifiers (WE); (ii) Handling classifiers (HDL); (iii) Extension and Surface classifiers (ES); (iv) Limb/body part classifiers (LBP). According to this classification, SASSes belong to the category of extension and surface classifiers. However, their occurrence and morphosyntactic properties have never been investigated in detail (§ 2.2.4.1). In fact, they are often mentioned together with WE, as if they shared the same behaviour and the same characteristics. Moreover, according to Petitta et al. (2015) SASSes in sequential evaluative constructions are bound morphemes.

In the data analysed, I did not find some of the handshapes included in the category of extension and surface as defined by Mazzoni (2008) for LIS, and the function detected neither seems to fit the label 'classifier' nor the definition of bound morpheme. Therefore, it was necessary to develop a parallel study that would allow to collect a larger number of SASSes, and to investigate their nature and function. To this end, I elaborated another picture description task in order to understand:

i. which handshapes can be included in the category of SASS;
ii. to what extent SASSes differ from other categories of classifiers;
iii. their function with respect to the noun;

iv. their nature as bound or free morphemes.

The object description task included drawings of 25 objects displaying different size, shape, colour and quality. It was administered to four LIS native signers, who are part of the SIGN-HUB Project, coming from Siracusa, Trieste (they also participated in the first elicitation task), Brescia and Milan. The signer from Brescia (north of Italy) is 39 years old. He grew up between Rome and Padua, where he also attended the last two years of high school at the Institute for the Deaf. His siblings are deaf and LIS is his everyday language. He has a degree in Psychology and a specialisation as psychotherapist. He works as psychotherapist and LIS teacher. The informant from Milan is 51 years old. She was born in Brescia, in the north of Italy, and now lives in Milan. Her parents are deaf but her sister and daughter are hearing. She grew up using both LIS and Italian. As a second job, she teaches LIS at classes of different levels.

I asked participants to name the objects that were drawn on paper. This time, the objects were also coloured and characterised by features that would elicit either the material they are made of or their origin (e.g. Mexican hat). In so doing, I could investigate the distribution of SASSes with respect to other adjectives within the noun phrase. I recorded the participants' productions with a digital camera on a tripod and successively used ELAN for the annotations. Some items included in the task are provided below.

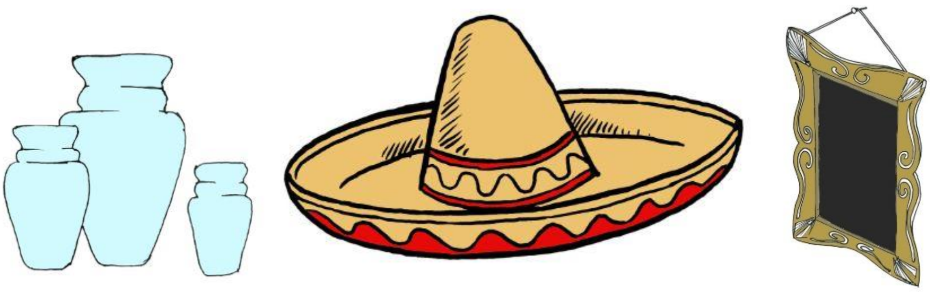


Figure 30. Some items of the second object description task[16]

In the following sections I illustrate: (i) the handshapes participating in the formation of size and shape specifiers in LIS, together with the referents to which they refer (§ 4.3.1); (ii) their differences with respect to whole entity classifiers, with which SASSes are often confused (§ 4.3.1); (iii) the phonological features having morphological status (§ 4.3.2),

[16] All items are provided in Appendix A3.

and (iv) their distribution within the noun phrase, which will allow to understand their nature as bound or free morphemes (§ 4.3.3).

4.3.1 SASSes handshapes

In this section, I list the handshapes occurring in LIS size and shape specifiers, as well as the referents that they usually describe.

As will be clear at the end of this section, SASSes are polymorphemic elements, in which the features of the handshape and movement contribute to create the final meaning. In general, the handshape is selected considering the shape of the referent, whereas other features such as the degree of joints flexion, which regulates the distance between the thumb and index/fingers tips, the joints at which movement is realised and the distance between the two articulators specify size. It is important to notice that all the handshapes below can occur in one or two-handed signs, depending on the entity they are describing. The type of referent also influences the plane of articulation: for instance, a SASS describing the shape of a frame will be articulated on the vertical plane, whereas the SASS specifying the shape of a table will be articulated on the horizontal plane. Moreover, the same handshape can refer to entities of different size by modifying some of its phonological features. Therefore, the final meaning of SASSes is context-dependent.

All the handshapes but flat open 4 can combine with movement to trace the perimeter/shape of the referent. The handshapes detected are reported in the table below.

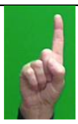
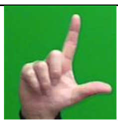
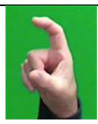
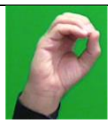
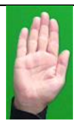
 G	 L	 Curved open L	 Curved closed 5	 F
 Curved open F	 Unspread curved open 5	 Spread curved open 5	 Unspread 5	 Flat open 4
 Flat open 5				

Table 13. Handshapes for Size and Shape Specifiers in LIS

The G handshape can be used in a two-handed SASS to trace the perimeter of every kind of entity, both two-dimensional or three-dimensional. In example (107), the signer employs the G handshape to trace the square shape of a carpet. Notice that the SASS is marked by the mouth gesture 'teeth on lip' encoding augmentative features, and the articulation is proximalised to the elbow joint in order to specify the big size of the carpet.

tl

(107) SASS(G): 'square_big' (about a carpet) [GA_odS_3]

The same handshape can be employed to describe the shape of small, rectangular and thin (two-dimensional) objects, such as stickers. The use of this SASS is guided by semantic reasons (smaller and thin referent). Moreover, the two SASSes differ in the type of movement: path [tracing] in (107) versus [flexion] of the index finger in (108) below.

(108) SASS(G): 'rectangular' (about a sticker) [MA_odS_1]

The L handshape is used as a static two-handed SASS to convey the meaning 'rectangular' or 'square' denoting objects such as mirrors, tables, carpets (109), frames, which are not thick and two-dimensional.

(109) SASS(L): ‘square’ (about a carpet) [GA_odS_14]

Curved open L is selected to convey the meaning ‘round/oval’ of objects such as clock-faces, tables, hats, plates, perceived as two-dimensional. In the example below, we see that it is employed to convey the round shape of the table. The SASS is marked by the typical non-manuals for diminutive features (squinted eyes and tongue protrusion), thus specifying the meaning ‘small round table’.

sq+tp
(110) SASS(curved open L): ‘round’ (about a table) [RO_odS_18]

This handshape can be employed in a SASS displaying movement to trace the shape of objects like vases perceived as thin, expressing the meanings ‘cylindrical/curved and thin’. If marked by the non-manuals for diminutive or augmentative, it also conveys features of size. In the example below, the signer articulates augmentative non-manual markers, and enlarges the articulation of the SASS to define both the size and shape of the vase.

tl

(111) SASS(curved open L): ‘rounded_big’ (about a vase) [MI_odS_16]

By augmenting the flexion of the base joint, curved open L can also be used to describe the rectangular shape of two-dimensional narrow objects, such as stickers or stripes. Once more, the SASS can be marked by diminutive non-manuals to specify the small size of the referent, as illustrated below.

sq+ tp

(112) SASS(curved open L): ‘rectangular’ (about a sticker) [GA_odS_1]

The curved open L handshape can also be employed as one-handed SASS and function as a SASS for size. This is illustrated in example (113) below, in which the signer defines the size of a small cup. In this instance too, the handshape can be more or less open to convey different sizes by changing flexion of the base joint, and be marked by the typical non-manual markers for augmentative or diminutive.

sq+ tp

(113) SASS(curved open L): ‘small’ (about a cup) [GA_odS_11]

Curved closed 5, F and curved open F displaying movement are used to describe the shape of three-dimensional cylindrical, long and thin objects like poles, stems of floor lamps, table- and chair-legs, pipes. In (114), I provide the SASS used to describe the stem of a lamp. Notice that the signer blows out air to convey the thinness of the stem.

blow

(114) SASS(F): ‘cylindrical_thin_long’ (about a lamp stem) [GA_odS_19]

F can also be used without movement to define the shape of two-dimensional small and round objects like clock-faces, buttons or coins. As in the example below, it can occur with diminutive non-manual morphemes.

sq+tp

(115) SASS(F): 'round' (about a clock-face) [GA_odS_8]

Moreover, F can be employed to define thickness of very thin objects. In the example below, it is produced to denote a very thin book. As in (114) above, it occurs with the non-manual 'blow' which further describes that the book is thin and light.

blow

(116) SASS(F): 'thin' (about a book) [MA_odS_1]

Unspread curved open 5 is employed for three-dimensional cylindrical/cone-shaped/round objects, such as big cups, top hats, heavy vases, gutters, pipes. It can display movement to trace the shape of the entity (117), or not (118).

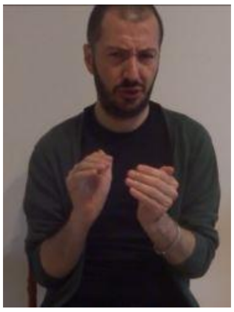
(117) SASS(unspread curved open 5): 'cone_shaped' (about a lamp cover) [MI_odS_7]

pc

(118) SASS(unspread curved open 5): ‘round’ (about a cup) [RO_odS_23]

The non-manual marker puffed cheeks (‘pc’) in (118) further defines the rounded shape of the cup, thus it is an example of echo-phonology (§ 2.2.3).

The same SASS can be selected to convey the size of objects with roundish shape, such as shoes. See example (119) below.



[pi]

(119) SASS(unspread curved open 5): ‘little’ (about a shoe) [MA_odS_13]

Unspread curved open 5 can also be used as a SASS defining thickness. By modifying the distance between the thumb and fingers tips, namely by changing the flexion of the base joints, it encodes different degrees of thickness of three-dimensional objects like books or bricks. As we can see in the example below, it can occur with the non-manual markers for augmentative features, which specify the big size of the entity.

fe+tl

(120) SASS(unspread curved open 5): ‘thick’(about a book) [RO_odS_15]

Spread curved open 5, instead, is used for entities which are round/spherical, big and wide. In other words, three dimensional entities. It can encode movement to trace shape, as in the example below. The rounded shape is further conveyed through puffed-cheeks simultaneously articulated with the manual sign.

pc

(121) SASS(spread curved open 5): ‘round’ (about a lamp cover) [GA_odS_19]

Unspread 5 (either with the thumb extended or not) is employed to describe the shape of rectangular/square and thick objects such as books (122), boxes, cuckoo clocks. Since it refers to three-dimensional and quite big entities, it is usually accompanied by the typical non-manuals for augmentative features.

fe+tl

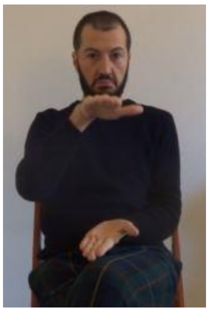
(122) SASS(unspread 5): 'rectangular' (about a book) [GA_odS_15]

When it functions as a SASS denoting size, it is a two-handed sign articulated on the horizontal or vertical plane, with the palms of the hands facing each other, and the fingertips oriented outward. Moreover, it displays a short-movement downward as to define the segment of space corresponding to the size of the entity. As the other SASSes, it can occur with the non-manual markers conveying diminutive or augmentative features. This SASS can be employed to define the size of both two- or three-dimensional objects.

tl

(123) SASS(unspread 5): 'big' (about a carpet) [MA_odS_3]

This handshape can also function as a two-handed SASS defining thickness of three-dimensional objects such as big boxes, as illustrated below.



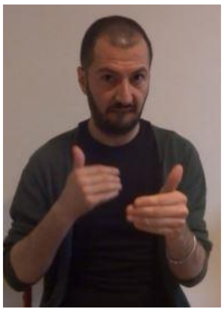
(124) SASS(unspread 5): ‘thick’ (about a box) [MA_odS_9]

Flat open 4 is only used as a two-handed SASS to convey size. It can be used to define the size of both animate and inanimate entities, no matter what their shape is. It is a two-handed sign articulated on the vertical (125-126) or horizontal (127) plane, depending on the entity represented. The palm of the non-dominant hand can either face the palm of the dominant hand or not, and it can be articulated as ‘unspread 5’ for ease of articulation, as in (125). Nevertheless, the fingertips of the two hands are oriented towards opposite directions. Size is encoded through the distance between hands, together with the non-manual markers for diminutive or augmentative features.

tl

(125) SASS(flat open 4): ‘big’ (about a vase) [RO_odS_6]

(126) SASS(flat open 4): ‘little’ (about a vase) [MA_odS_6]



______________________tl

(127) SASS(flat open 4): ‘big’ (about a shoe) [MA_odS_21]

Flat open 5 can be selected for three-dimensional objects which are not very thick such as books, tables, stool-tops. In the example below, we see that it can incorporate a tracing round movement to specify the shape.

(128) SASS(flat open 5): ‘thick_round’(about a table) [MA_odS_18]

In (129) below, we see that the same SASS is marked by puffed cheeks. This is because the signer is describing a stool top, rather than a table, which is round and soft.

______________________________pf

(129) SASS(flat open 5): ‘thick_round’ (about a stool top) [MA_odS_18]

From the analysis of the handshapes listed above, we can get interesting and new insights.

First of all, it is clear that SASSes are signs conveying information of size, shape, thickness of the entities they refer to. Usually, handshape and movement encode information of shape, whereas the articulation as one- or two-handed sign and the distance between hands, or between the thumb and fingers tips, encode size and thickness. One shared property is that their final form is context-dependent, namely it depends on the feature of the object that the signer wants to convey. In general, SASSes conform to the possibilities detected by Wallin (2000). Three-dimensional objects have three different dimensions: Dim-1 is the dimension with the largest extension, Dim-2 is the intermediate dimension, Dim-3 refers to the smallest dimension. Usually in LIS, SASS handshapes encode the smallest dimension, whereas the extension of the path movement defines the largest dimension. Handshape encodes the smallest dimension in SASSes without movement as well, but the biggest dimension is either conveyed through the distance between the two hands or through the distance between the thumb and finger tips.

The SASSes listed above can be grouped into two main categories, namely *static SASSes* and *tracing SASSes*. Despite being the terms coined by Supalla (1986; 1982), I use them in a different way.[17]

(130) Definition of static and tracing SASSes in Italian Sign Language

i. *Static SASSes*. One- or two-handed signs specifying information of size and shape of referents, without displaying tracing movement.[18]
ii. *Tracing SASSes*. One- or two-handed signs conveying information of size and shape of referents by outlining their shape through movement.

In the remainder of this thesis, I will use the term SASSes to refer to both static and tracing SASSes, since they share the same morphosyntactic properties.

From the definition in (130), it is already clear that SASSes differ from the other categories of classifiers. In particular, I consider their properties with reference to those displayed by whole entity classifiers (WE), with which some static SASSes are

[17] Interestingly, the same conclusion has been reached by Kyuseva (in prep.) in her investigation of size and shape specifiers in Russian Sign Language (RSL).
[18] To be precise, static SASSes display a short repetitive movement towards the plane of articulation. This is to define the size of the referent since the two hands indicate the limits of the object projection. Nevertheless, this movement does not convey information of shape as in tracing SASS.

commonly confused. As a matter of fact, WE classify referents by considering their shape. However, SASSes and WE display different morphosyntactic features, as far as NGT (Zwitserlood 2003) and RSL (Kyuseva, in prep.) are concerned.

I use the criteria defined by Zwitserlood (2003: 153), discussed in § 2.2.4.1, to show that the same holds in LIS as well.

(131) Differences between SASSes and whole entity classifiers in LIS

i. SASSes in LIS, both tracing and static, do not classify referents, rather they specify information about their size and shape. For this reason, they always occur after the nominal sign which they are describing;
ii. Movement in SASSes never describes how the referent moves, namely a path motion, rather it describes features of size and shape;
iii. The handshape in SASSes contributes to the final meaning encoding information of shape, but it never functions as a verbal argument as WE, instead, do;
iv. SASSes in LIS can express detailed information about the size and shape of referents, whereas WE classifiers represent the shape of referents as a whole;
v. WE and SASSes in LIS differ in their function: the former *classify* referents on the basis of their shape; on the other hand, SASSes *specify* information about size and shape of the referents;

From the list of properties in (131), I conclude that SASSes in LIS function as nominal modifiers and thus differ from the other categories of classifiers, in particular they are completely different from whole entity classifiers. It is important to maintain the term *specifiers* for the elements belonging to this category since their main function is to specify rather than classify referents. The fact that they can provide detailed information about the shape of referents by tracing their shape or perimeter makes them an open class. Consequently, the list of handshapes could be expanded during time.

What is interesting, though, is that the selected handshapes all belong to the phonological inventory of LIS. This is important in that, being highly iconic, it could be argued that they have a gestural nature. Nevertheless, their linguistic nature can be supported considering two main issues: (i) different signers used the same handshapes to convey features of referents, rather than creating a new SASS on the spot; (ii) even though they are highly iconic, SASSes do not depict the absolute size of the entity in a 1:1 scale, rather they depict it proportionally. This is in line with previous studies arguing that classifiers handshapes are categorical linguistic units which can be used gradiently to specify size (Emmorey & Herzig 2003). The same conclusion is reached by Lu & Goldin Meadow (2018) in their investigation about depiction of size and shape in American Sign Language (ASL). The authors found that the handshapes selected are conventional and categorical, but they can be used gradiently. Moreover, they argue that the signers involved in their study often preferred depictive strategies (namely, size and shape specifiers) instead of lexical adjectives because SASSes allowed them to be more accurate in their description. I would argue that this is related to the possibility signers have of using manual articulators to visually encode concepts such as size. In other words, the use of size and shape specifiers to describe referents of the world is a reflection of the issue of embodied cognition, namely the possibility for the language to represent what we perceive (§ 1.2.2). What is striking about this is that languages of different modalities do this by employing the linguistic elements they are endowed with, reflecting the fact that linguistic encoding is innate and universal, and what differs is the way in which languages represent it.

One further confirmation about the fact that SASSes are linguistic rather than gestural elements comes from the possibility of accounting for their morphological structure by adopting the model developed by Brentari (2005). This is illustrated in the next section.

4.3.2 Morphological template for LIS size and shape specifiers

In the previous section, I have listed the handshapes that LIS employs in size and shape specifiers, and illustrated how they differ in properties and function from whole entities classifiers. It results that SASSes are complex elements, whose final meaning depends on the selected morphemes. Particularly, in SASSes we distinguish different meaningful parts.

i. The handshape, which is mainly involved in conveying the shape of the referent. Compare (132) and (133) below.

tp

(132) SASS(curved open L): 'round' (about a plate) [MI_odS_23]

(133) SASS(L): 'square' (about a carpet) [GA_odS_14]

ii. The number of fingers selected specifies thickness. See (134) with respect to (135).

(134) SASS(G): 'square_thin' (about a sticker) [MA_odS_1]

tl

(135) SASS(unspread 5): 'square_thick' (about a book) [GA_odS_15]

iii. The path movement can describe any kind of shape.

It follows that SASSes subcomponents cannot be just considered phonemes, despite being involved in their phonological structure. They should rather be considered as 'phonomorphemes', in the sense of Johnston & Schembri (1999).

The double nature of SASSes subcomponents can be formalised by adapting the template developed by Brentari (2005) for the structure of classifiers in ASL (§ 2.3.2). The possibility of accounting for the structure of SASSes with this model supports their belonging to the non-core lexicon of LIS. The model permits to specify the nodes that allow for morphological alternation, which are indicated in italics. Words in bold, instead, indicate the highest node in the tree that includes all sites of morphological alternation. I use the same test defined in Brentari (2005) to decide whether a feature allows for morphological alternation: if a change in form results in a new form with a different meaning, the structure allows morphological alternation. If the change results in an ungrammatical or impossible form, the node is phonological.

In the figure below, I tentatively represent the morphological template for size and shape specifiers in LIS. I then provide some explanations of the representation proposed.

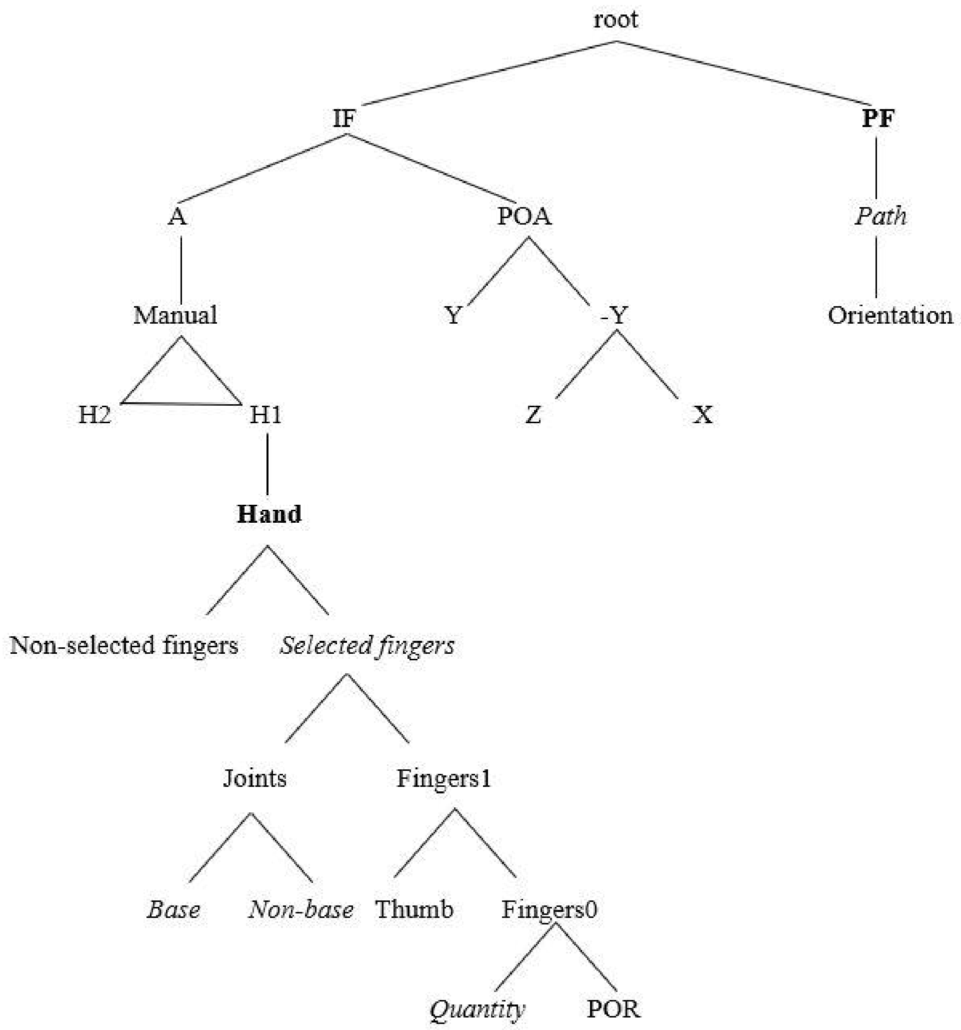


Figure 31. Morphological template for SASSes in LIS

The structure above accounts for both static and tracing SASSes. The difference is caught by the presence of the prosodic feature 'PF' node, which is in bold because it allows for morphological alternation at the path node. Indeed, by changing the tracing path of SASSes we can describe different shapes, therefore this node is morphological.

As far as the inherent features 'IF' branch of the structure is concerned, we see that the first morphological node is 'hand'. Articulator and POA (place of articulation) are provided since they are features involved in the production of SASSes. Nevertheless, they are not morphological. Within the class node 'hand', we find several features allowing for morphological alternation. These concern the shape (base and non-base joints), and number of selected fingers, whose changes account for the alternation observed in the examples (132-133) and (134-135), respectively. This is in line with

Eccarius (2008: 48), who considers (i) joint flexion as primarily involved in size specifications, (ii) a combination of base and non-base joints to define shape, and (iii) the combination of base and non-base joints with quantity of selected fingers and the arrangement of the fingertips as involved in representing three-dimensional entities. I did not include the non-manual node within the articulator branch because the non-manuals occurring with SASSes are not part of their phonological structure.

Crucially, the nodes allowing for morphological alternations in the SASS structure are the same found to be fundamental for allowing manual simultaneous evaluation with nominal signs. This confirms the fact that the linguistic system calls for the articulation of a SASS when the nominal sign is not able to encode the size and shape features. This is probably due to the need (and possibility) of visually encoding these properties of referents.

4.3.3 Morphological properties and syntactic distribution of SASS in LIS

Having defined the handshapes belonging to the SASS category in LIS, as well as their morphophonological properties, it remains now to understand their morphosyntactic nature.

According to the data collected, SASSes are employed to convey information about the size and shape of referents, and can be marked by dedicated non-manuals to specify evaluative features. As introduced in § 2.2.4.1, in the literature on classifiers in LIS it has been claimed that SASSes form verbal predicates and that they can combine with roots of motion, resulting in unaccusative predicates (Mazzoni 2008: 163). However, it is not clear which classifiers are included in the category of extension and surface and, crucially, in my data I do not find instances in which SASSes indicate the motion of the referent.

The SASSes I detected, both in the data to investigate evaluative strategies (§ 3.3), and in the data elicited to specifically investigate the occurrence of SASSes (§ 4.3), appear in nominal domains, after the nominal sign for the referent. SASSes function as adjectives in conveying information about the entity they are describing. Specifically, SASSes can either (i) occur immediately after the nominal sign, as in the examples of sequential evaluation reported in § 4.2.2, or (ii) be distributed among other adjectives occurring within the noun phrase, as illustrated below.

fe+tl

(136) HAT MEXICAN SASS(L): 'round'

'Big round Mexican hat' [GA_odS_12]

Examples such as (136) suggest that SASSes function as adjectives. Their distribution within the DP needs further investigation, however I would argue that they can function both as attributive and predicative adjectives (i.e. non-verbal predicates).

Considering the morphosyntactic properties stated above, I conclude that SASSes in LIS should be distinguished from other categories of classifiers. They are better analysed as adjectives which can appear both in attributive or predicative constructions to convey information about the size and shape of referents, as argued by Bergman & Wallin (2001) for SSL, and Zwitserlood (2003) for NGT.

Furthermore, it is important to notice that the SASSes detected differ from those mentioned by Newport & Bellugi (1978), who consider SASSes as part of compounds in which they indicate a general class of handshapes. Indeed, the authors claim that the SASSes in these constructions do not vary to specify details of size and shape. This is what Petitta et al. (2015) argue for SASSes in evaluative strategies, claiming that they are bound morphemes because they can occur with "different signs bases that share some features, depending on the properties of the referent" (Petitta, Di Renzo & Chiari 2015: 159). However, this is not the case for the SASSes I detected.

Firstly, as the example in (136) shows, SASSes are not bound to the noun they refer to, but they can be separated from it by other adjectives and they can also occur on their own. Secondly, the SASSes occurring with nominal signs do not define the class the referent belongs to, rather, they specify and add detailed information about the size and shape.

Moreover, in order to be affixes SASSes should attach to a wide range of bases, but this is not attested in LIS. It follows that the SASSes detected are free lexical items. Therefore, they could be considered the second member of a compound. However, the examples presented so far show that this is not the case either. As illustrated in Chapter 2, in compounds involving SASSes: (i) the SASS is semantically superfluous in that it refers to classes of objects rather than specifying information about the size and shape of the considered referent; (ii) the two members cannot be divided; and (iii) they display phonological reduction. As the examples discussed in the sections above show, none of these conditions hold for the structures involving SASSes analysed so far. In other words, sequential evaluative constructions are better considered phrases rather than compounds.

4.4 Typological properties of LIS evaluative constructions

In the previous sections, I have described the strategies employed in LIS to encode evaluative features (§ 4.2), and investigated the morphosyntactic properties of the elements involved, namely non-manual markers (§ 4.2.1.6) and SASSes (§ 4.3). In this section, I explore LIS evaluative constructions in a typological perspective.

Recall that from the analysis of both corpus and elicited data it results that LIS is endowed with dedicated non-manual markers for each evaluative feature. These are reported below.

(137) Non-manual markers encoding evaluative features in LIS

i. Diminution is encoded through squinted eyes and tongue protrusion;
ii. Augmentation involves furrowed eyebrows and teeth on the lower lip;
iii. Contempt is conveyed through furrowed eyebrows and mouth corners down, sometimes with tongue protrusion;
iv. Endearment is expressed through inner brow raised, mouth corners slightly up and, sometimes, head tilt on the side.

As shown in § 4.2.1.6, these non-manual markers can be considered evaluative affixes because they are bound to the manual sign with which they co-occur and, most importantly, they encode the semantic primitives BIG, SMALL, GOOD, BAD.

Data shows that evaluative non-manual markers can either occur with nominal signs, thus resulting in instances of simultaneous evaluation (manual and non-manual), or with SASSes following the nominal signs, resulting in sequential evaluative constructions to encode diminution and augmentation. The phonological restrictions investigated in § 4.2.3 showed that the alternation sequential/manual simultaneous to encode diminutive and augmentative feature is phonologically constrained. Specifically, manual simultaneous evaluation, namely the encoding of diminutive and augmentative features through NMMs and phonological modifications of the manual sign, is allowed when the nominal sign can be modified in order to encode [size]. When this is not possible, a SASS is articulated in order to encode it, while being marked by dedicated NMMs. These phonological modifications for morphological means are reminiscent of the phonological modifications observed in some spoken languages when a diminutive or augmentative affix is attached to the stem. In the example below from Slovak, the consonant [c] is palatalised to [č] when the diminutive affix -k- is present (Gregová 2013: 334).

(138) *Palic-a* > *palič-k-a*
Stick-SG.F > stick-DIM-SG.F
'A little stick'

At this point, a clarification is in need. The investigation on SASSes carried out in § 4.3 shows that SASSes are free lexical item, rather than bound morphemes. It follows that strategies of sequential evaluation are not strictly morphological, in that they require the presence of a lexical item to convey the evaluative feature (i.e. the SASS). [19] For the sake of completeness, I argue that they should be excluded from the domain of evaluative *morphology*. Recall from Chapter 1 that languages can encode evaluative features through different means (morphemes, adjectives, vowel shifts), and the set of morphological markers encoding evaluative features constitute the subdomain of 'evaluative morphology'. LIS is typologically not different from spoken languages in using different elements (here, SASSes and bound morphemes) to encode evaluative features, but while evaluative simultaneous constructions do constitute examples of evaluative morphology, sequential constructions do not. Nevertheless, sequential constructions can be included in the more general domain of evaluative *constructions* since they involve SASSes, which

[19] Despite the fact that these constructions do not involve the concatenation of a sequential segment (i.e. a bound morpheme), as discussed in § 2.4.2.1, but rather involve the addition of a free morpheme (i.e. a SASS), I maintain the term 'sequential' for ease of clarity, and to distinguish straightforwardly these constructions from simultaneous ones.

constitute the base for the occurrence of evaluative non-manual morphemes encoding diminutive and augmentative features.

What is crucial is that evaluative constructions in LIS, both simultaneous and sequential, respect the typological properties defined for evaluative constructions in spoken languages (§ 1.3.3), as shown below.

i. First of all, LIS is endowed with dedicated morphemes to encode evaluative features, both qualitative and quantitative (recall that some languages just display some features or none);
ii. The preferred strategy involves affixation of dedicated non-manual morphemes to the base (bases are mainly nominal signs, but we have seen that evaluative NMMs can also occur with adjectives and SASSes);
iii. Evaluative constructions respect both the semantic and formal criteria defined by Grandi (2002): they are formed by a base, i.e. the manual sign encoding the standard value, and by a recognisable evaluative marker, i.e. the non-manual markers, encoding the semantic primitives BIG/SMALL, GOOD/BAD, thus fulfilling a modification function and conveying a new semantic concept.

As far as the inflectional/derivational continuum is concerned, I argue that evaluative non-manual morphemes in LIS belong to the domain of derivational morphology, for the following reasons:

i. They are not obligatory and not relevant to syntax;
ii. they carry a precise meaning which alters the meaning of the base;
iii. they are productive since they can attach to nouns, adjectives, SASSes;
iv. their presence conveys a new semantic concept, and thus creates a new lexeme.

Before concluding, it is important to underline that LIS exploits a sign language-specific property to express evaluative features. Evaluative constructions in LIS can be characterised by polysemy, but this is not also characterised by ambiguity, as is the case in some spoken languages. Specifically, the same construction can convey both diminution and endearment, but thanks to the availability of different articulators, LIS can convey both distinctly but simultaneously: the manual sign encodes the size feature, whereas the more subjective features of endearment and contempt are expressed through non-manual markers.

Evaluative constructions in LIS also respect the generalisation stating that the morphology of sign languages belongs to the agglutinative type (Schuit 2007). Indeed, evaluative morphemes are identifiable and segmentable, despite being simultaneous to the manual sign.

4.5 Conclusions

The present chapter has described and analysed evaluative constructions in LIS.

It has demonstrated the importance of integrating different perspectives in order to have a complete picture of the phenomenon. To be more specific, my investigation started from the assumption that the semantic primitives BIG, SMALL, GOOD, BAD encode innate and universal concepts. This was the starting point to understand whether and how LIS, a visuo-gestural language, encoded evaluative features.

The analysis of both elicited and corpus data has revealed that LIS does have dedicated morphemes for each evaluative feature, and that evaluative constructions respect the typological generalisations made on the basis of evaluative morphology in spoken languages, despite the different modality involved. Crucially, data show that in order to encode these universal features, LIS exploits some modality-specific possibilities which allow to visually express concepts through linguistic means. These findings enrich both the description of the morphological processes in LIS and the knowledge of the phenomenon of evaluative morphology in general, by adding the point of view of sign languages.

The investigation of evaluative constructions has also allowed to improve the description of size and shape specifiers in LIS. In particular, I have defined the handshapes belonging to this category, and I have accounted for their complex polymorphemic nature and morphosyntactic function. In so doing, I have filled a gap in the literature on LIS classifiers, and clarified the nature of these complex elements.

Chapter 5. Formal derivation of evaluative constructions

5.1 Introduction

As illustrated in Chapter 1, the literature on evaluative morphology mainly focusses on the semantic and pragmatic aspects of evaluative morphemes, though we also find some formal analyses accounting for their morphosyntactic properties. These studies constitute the starting point for the present chapter, which tackles the issue of evaluative constructions in LIS from a syntactic point of view. Specifically, I discuss two possible derivations within two formal perspectives which are developed within the Minimalist Program but show quite different implementations: the Cartographic Approach (§ 5.2) and Distributed Morphology (§ 5.3). The two approaches are exemplified through studies concerning evaluative morphemes, in § 5.2.1, § 5.3.2 and § 5.3.3. § 5.4 introduces the assumptions leading to the formulation of the derivations for LIS evaluative constructions proposed in § 5.4.1 and § 5.4.2. § 5.5 draws some conclusions.

5.2 The Cartographic Approach

The Cartographic Approach (see Cinque & Rizzi 2008 for an overview) developed in the late 90's, soon after the emergence of the Minimalist Program. It is defined as "the attempt to draw maps as precise and detailed as possible of syntactic configurations" (Cinque & Rizzi 2008: 43).

In a nutshell, it is a research program that draws parallels between the functional elements of the clause and other configurations, such as nominal expressions, by extending the X-bar format to account for the hierarchical structures of functional categories as well. The extension of the X-bar format to the Complementizer Phrase (CP) and the Inflectional Phrase (IP) started with Chomsky (1986). It builds on the assumption that clauses and phrases in natural languages have the same configuration, namely they are projections of a lexical category (a noun or a verb), which is dominated by a series of functional elements constituting its functional structure. Both the hierarchical structure and the several functional heads are assumed to be universal across languages, governed by Universal Grammar (UG). The display, or not, of one specific head depends on the possibility the language has to overtly express it, or not. In addition, the different linear orders of elements attested cross-linguistically are explained in terms of movement (head or phrasal movement). The functional skeleton is meant to provide abstract specifications to the lexical content of the head, and the elements within it are hierarchically organised.

These assumptions started a tradition of investigations aiming at accounting for universal hierarchies of functional projections both in the clausal and nominal domain. The first results were collected in Cinque (2002). Specifically, the leading assumption is that each functional head in the hierarchy hosts a specific morphosyntactic feature. Crucial to cartography, then, are typological studies accounting for the syntax of languages. Indeed, universal hierarchies are built by taking into account large numbers of languages and investigating word order. Famous examples are the analyses of the cartography of adverbs and adjectives developed by Cinque (1999; 2010), as well as the analysis of the order of nominal modifiers across languages (Cinque 2005).

Among the studies accounting for the hierarchy of functional projections within the extended projection of the noun phrase, namely the DP, we find Cinque's (2015) work, which is discussed in the next section.

5.2.1 The cartography of evaluative projections (Cinque 2015)

While assuming the *Mirror Principle* advanced by Baker (1985: 375), which states that morphological derivations reflect syntactic derivations, Cinque (2015) proposes the existence of functional projections dedicated to evaluative features within the DP, starting from the evidence that in some languages (such as Italian) evaluative morphemes display fixed positions and are constrained in the order in which they can occur. The study first considers evaluative suffixes in Italian, which are various and can occur in sequences. Compare (139a) with (139b) from Cinque (2015: 69).

(139) a. *Casa* > *cas-ett-in-a*
house > house-END-DIM-F.SG
'Small cosy house'

b. *Casa* >**cas-in-ett-a*
house > *house-DIM-END-F.SG

As the examples show, endearment and diminutive morphemes in Italian can only appear in the order endearment>diminutive, and not the other way around. In the same vein, pejorative suffixes must precede augmentative ones. Compare (140a) with (140b) below (Cinque 2015: 70).

(140) a. *Donna* > *donn-acci-on-a*
woman > woman-PEJ-AUG-F.SG
'Big ugly woman'

b. *Donna* > **donn-on-acci-a*
woman > *woman-AUG-PEJ-F.SG

Moreover, diminutive affixes precede pejoratives, but also endearment precedes pejorative. This is illustrated in examples (141a-b) and (142a-b), respectively (Cinque 2015: 71-72).

(141) a. *Uomo* > *om-in-acci-o*
man > man-DIM-PEJ-M.SG

b. *Uomo* > **om-acc-in-o*
man > *man-PEJ-DIM-M.SG

(142) a. *Zio* > *zi-ett-acci-o*
uncle > uncle-END-PEJ-M.SG

b. *Zio* > **zi-acc-ett-o*
uncle > *uncle-PEJ-END-M.SG

In accordance with the Mirror Principle, the suffixes closer to the root belong to lower functional projections. It follows that the head hosting endearment features is lower than the one hosting the diminutive, which is lower than the pejorative head. Furthermore, the pejorative head is lower than the augmentative head. The resulting order of evaluative functional projections is illustrated below.

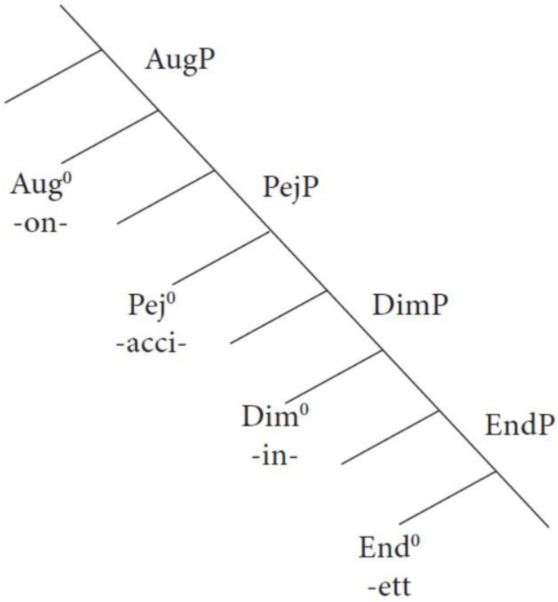


Figure 32. Order of evaluative heads (Cinque 2015: 71)

Empirical evidence for the order in Figure 32 comes from other unrelated languages such as English, Russian, German and Piapoco. I provide two illustrative examples below.

(143) *Katze* > *Kätz-lein-chen* **Kätz-chen-lein* (German)
cat > cat-END-DIM *cat-DIM-END
'Cat' > 'nice little cat' (Cinque 2015: 73)

(144) *Zuma-i-ya-na* (Piapoco)
child-M-END-DIM
'Little child' (Cinque 2015: 74)

Moreover, the author derives the position of the evaluative heads with respect to those dedicated to other elements in the noun phrase, such as adjectives of value, size, shape, colour and provenance. Once more, cross-linguistic comparison is crucial in order to be able to define the exact position of the different functional projections. Special evidence comes from non-Austronesian Papuan languages of New Guinea, exemplified in (145), and English (146-148) from Cinque (2015: 77).

(145) *And galib akan.* (Fuyug)
thing small DIM
'It is a very small thing.' (Bradshaw 2007: 53)

(146) *That's quite a nice little discovery you've made there.* (English)

(147) *You, my little white guinea pig.* (English)

(148) *My little Chinese doll.* (English)

Notice that here the English adjective 'little' is considered a diminutive marker. The examples suggest that the order of the projections dedicated to evaluative features and the other adjectives is the following: value>size>shape>colour>provenance>NP (Cinque 2015: 77). Therefore, the hierarchy turns out to be:

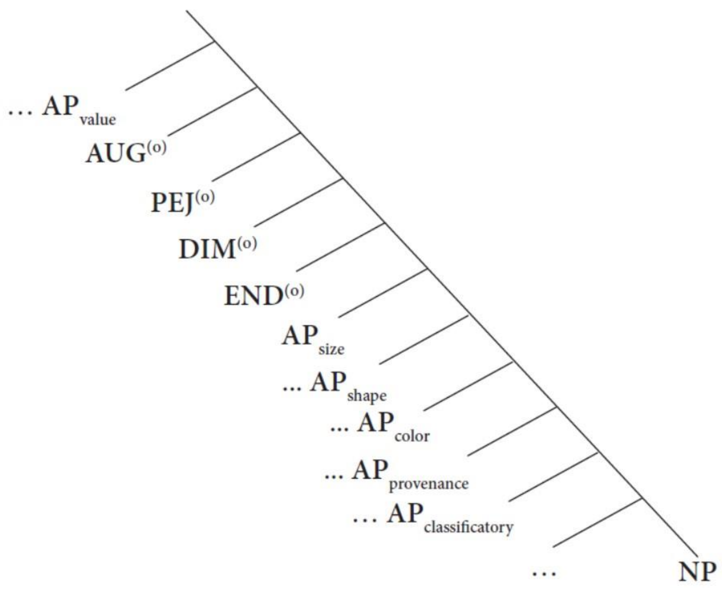


Figure 33. Order of adjectives and evaluative heads within the DP (Cinque 2015: 78)

The different orders attested cross-linguistically are explained in terms of movement (head or phrasal).

5.3 Distributed Morphology

Distributed Morphology (henceforth: DM) is a formal framework of grammar first elaborated by Halle & Marantz (1993; 1994), and later developed and improved by many others (see Siddiqi 2018 for an overview). It developed within the Minimalist Program (§ 1.2.1), thus it adopts its main features but one, i.e. the existence of the Lexicon as a separate component functioning as a repository of stable form-meaning correspondences. In other words, DM is a non-Lexicalist theory.[20] As a non-Lexicalist theory, DM assumes that (i) syntax is the only generative force of grammar, driving the construction of both words and phrases in the same way by applying the syntactic (minimalist) operations Merge, Move and Agree; (ii) the Lexicon in the generative sense is 'distributed' across three different components, called *Lists,* which contain the features entering the computation (*List 1*), their phonological representation (*List 2*), and their semantic interpretation (*List 3*). In so doing, DM is a 'realisational model of grammar' in that words are not present throughout the whole computation, rather, they appear at the end of the syntactic derivation as the realisation of features. Moreover, DM is generally considered a 'morpheme-based' theory, as opposed to 'word-based' theories, in that the syntax manipulates bundles of features (sometimes called morphemes) rather than words. The basic architecture of the grammar in DM is provided below.

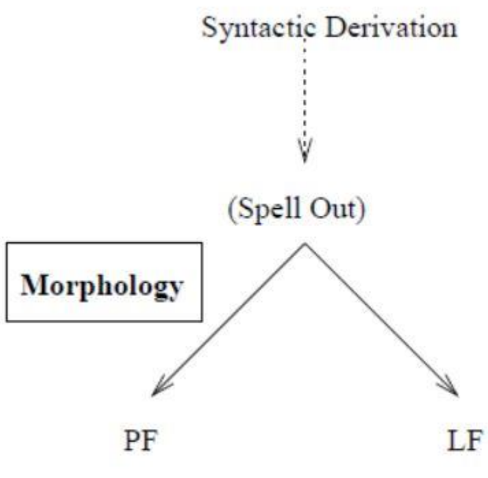


Figure 34. The architecture of grammar in Distributed Morphology (Embick & Noyer 2007: 292)

[20] I do not discuss the differences between Lexicalist and non-Lexicalist theories. For general information and useful bibliography the reader is referred to Siddiqi (2018) and Harley (2010).

The computation starts with the selection of elements from *List 1*, which contains the primitives of syntax, namely the units occupying the terminal nodes of hierarchical structures.[21] Specifically, List 1 contains interpretable and uninterpretable features, as well as elements carrying (some) lexical content. In other words, it contains morphosyntactic and semantic features such as [past], [± plural], [animate] etc., hosted in functional heads, and lexical roots (√root).[22] Features are assumed to be universal, whereas roots are language specific. Roots are assumed to enter the derivation category-less, that is, they are not specified for the lexical category. Therefore, they need to be categorised. This is formalised by the *Root Hypothesis* (Marantz 2001), which states that roots must merge with a category-determining functional head (called 'little x', where x can be nominal (n), verbal (v) or adjectival (a)) in order to obtain their lexical category (Marantz 2001; Arad 2003). This is shown below.

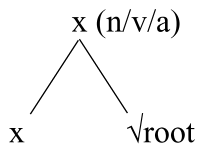


Figure 35. Root categorisation in Distributed Morphology (Marantz 2001)

Features are taken to occupy the terminal nodes of the syntactic structure. They are selected and combined (i.e. merged) to form words, DM is therefore considered an 'item-and-arrangement model' in that words (and phrases) are derived by concatenation of morphemes.

Both features and roots contain selectional requirements and conditions on insertion that need to be checked in order for the derivation to converge at the sensory-motor (PF) and conceptual-intentional (LF) interfaces. After the syntactic operations of Merge, Move and Agree, the elements in the computation are sent to *Spell-out*. Between Spell-out and PF, other idiosyncratic morphological operations of adjustment can apply:

[21] Notice that in the literature it is often the case that these elements are called 'morphemes' even though they are different from morphemes in the more common sense of meaningful units. In DM, morphemes are the units occupying terminal nodes, and they can either be roots or bundles of features.
[22] The literature about the identity of roots in Distributed Morphology reveals that it is a lively and open debate. I consider some issues in § 5.3.1 below.

morphological merger, fusion, fission and impoverishment. In particular, morphological merger takes two terminal nodes and puts them together under a single head node. Crucially, the two terminal nodes remain independent separate morphemes within the derived complex word. To explain it in Marantz's (1988: 261) words: "[…] a relation between X and Y may be replaced by the affixation of the lexical head of X to the lexical head of Y." At this point, the two nodes which are sisters under the same node can fuse thanks to the operation called Fusion. In so doing, they result a single lexical node and, consequently, a single Vocabulary Item (see below) is enough to express the bundle of features collected within the fused node. In Figure 34 above, this set of morphological operations activated on the way to PF corresponds to the 'Morphology' part, which indicates what is often called 'morphological structure' (Embick & Noyer 2007). In other words, morphological structure is the interface between syntax and phonology.

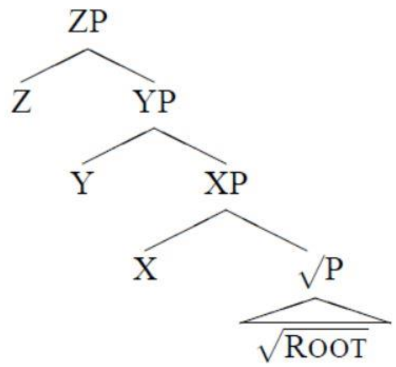
At this point of the derivation, the output of the syntactic operations is sent to LF for semantic interpretation, and to PF for the phonological realisation. Interpretable features need to be associated with their phonological form in order to be realised (Siddiqi 2010). This is what happens at PF, through the operation called 'Vocabulary Insertion'. Specifically, at PF the morphosyntactic features are associated with their phonological forms, which in DM are called Vocabulary Items (VIs) (also referred as 'exponents' of features), selected from *List 2, the Vocabulary.* Being the phonological realisation of features, VIs compete for insertion, since different VIs could be assigned to the same terminal node. Crucially, VIs do not only carry phonological information, they also contain information about the possible occurrence of the phonological string (condition on insertion). For instance, the feature [plural] in English has different phonological realisations, such as [-s], [-en] or [Ø], depending on the morpho-syntactic context of occurrence. At insertion, the feature [pl] is in a local relationship with the root and thus it can be conditioned by the identity of the root while selecting the proper exponent. This is formalised by *conditions on insertion*, consisting of a list of elements that can be associated with a specific exponent of a feature. The VI [-en] realising the [pl] feature in English only appears in the context of roots such as √ox, √child, etc. This is formalised with the notation in (149) below (Embick & Noyer 2007: 299), where (i) the feature to be encoded is indicated between square brackets; (ii) its association with VIs is indicated through the left-right arrow; (iii) the context of insertion is indicated between curly brackets.

(149) [pl] ↔ -en/{√ox, √child, …}___

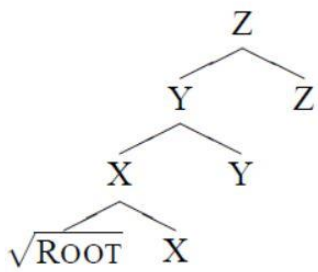
The selection of the proper VI is guided by the *Subset Principle* (Halle 1997: 428), according to which only a subset of features of the terminal node must be matched by the VI in order for insertion to take place.[23]

After insertion, i.e. after PF, some further operations can apply: linearisation and phonological readjustment. Linearisation in the word domain refers to the order displayed by the different functional heads composing the complex word (i.e. complex head). It is assumed that complex heads result from head movement of the root. Take for instance the structure in (150) below. This could either surface as √root-X-Y-Z, if the heads are linearised as suffixes, or it can appear as Z-Y-X-√root if the heads are prefixes, and so on. The complex head √root-X-Y-Z is provided in (151) (Embick & Noyer 2007: 303).

(150)



(151)



Crucially, the linearisation of the heads respects the Mirror Principle (Baker 1985). Nonetheless, sometimes the order of morphemes does not reflect the syntactic structure. This is generally explained in terms of operations that happen at PF, which modify the surface form of the word. Among these, phonological readjustment modifies the VI associated with a terminal node for semantic or phonological constraints (for instance, the modification of the stem *mouse* to *mice* to realise plural features).

List 3, or *Encyclopedia,* contains the extra-linguistic and real-world knowledge we have, namely the meanings to be associated with the linguistic atoms resulting from the derivation.

[23] Notice that, for some authors, VIs for roots do not compete for insertion. I get back to this below.

The whole structure of the grammar as conceived in Distributed Morphology is provided below.[24]

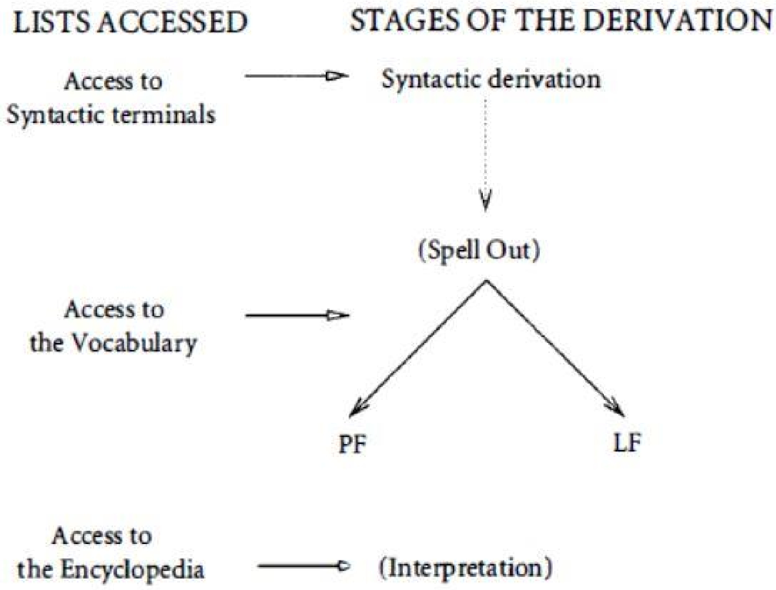


Figure 36. Grammar and Lists in Distributed Morphology (Embick & Noyer 2007)

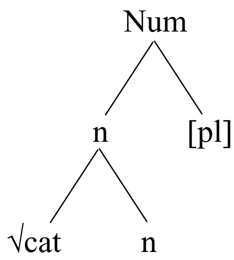
From the general description above, we can derive the three main properties of Distributed Morphology (Halle & Marantz 1994): (i) late insertion; (ii) underspecification; (iii) syntactic hierarchical structure all the way down.

i. *Late insertion*: it is the association of VIs with the bundles of syntactic and semantic features occupying the terminal nodes of the syntactic structure, which lack phonological specifications. The insertion is 'late' because it occurs after the syntactic operations.
ii. *Underspecification*: the VI associated with the features of a terminal node must be endowed with at least a subset of the features present in the terminal node. The Subset Principle (stated above) regulates the competition of the vocabulary items: the most specified VI wins the competition and is inserted as exponent into the terminal node.

[24] Notice that the domain 'morphology', also called 'morphological structure', is no more present in the grammar. The existence of this part is a matter of debate, but the morphological operations assumed to be part of it remain after the syntax and before PF.

iii. *Syntactic hierarchical structure all the way down*: hierarchical structures are constructed by syntactic operations. Other morphological and phonological processes can occur later, within the morphological structure or at PF.

To illustrate, see the structure for the derivation of the plural form *cats*. The root is firstly categorised by merging with the category-defining head n, and subsequently merges with the plural features hosted in the head of Num.



The plural is realised with the morpheme [s], namely /z/. The VIs associated with the root and plural features, respectively, are:

(152) √cat ↔ /cat/
[pl] ↔ /z/

5.3.1 The debate about roots

Before going on, it is necessary to mention the issue about roots which constitutes a contemporary debate among specialists of the DM framework.

As stated above, in DM the syntactic computation starts with the selection of morphosyntactic features and lexical roots. Generally speaking, roots are lexical elements lacking any syntactic or functional information, thus corresponding to the so-called lexical categories (called ‘l-morphemes’ by some authors). On the other hand, features are morphosyntactic features which are usually associated with functional projections, they can thus be associated with the more common functional categories (or ‘f-morphemes’). Despite this apparent ease in explaining these two peculiar units, the definition of roots has been at the centre of a lively debate for a long time (Harley & Noyer 1999; Pfau 2009; Kelly 2013; Harley 2014; Embick 2015). I briefly revise the issue since some aspects will be relevant for the proposal developed in § 5.4 below.

In the early models of Distributed Morphology, roots were generically identified as √, thus lacking phonological and semantic content. Therefore, at Late Insertion all the Vocabulary Items of the language could in principle realise that root. In other words, both 'dog' and 'cat' could be the realisation of √, since the phonological and encyclopedic information of the root were not assumed to be present at the beginning of the derivation.

Subsequent works showed that roots are different already at List 1, namely before Vocabulary Insertion. Harley & Noyer (2000) proposed that the VI to be associated with the root depends on the licensing environment of the root (i.e. c-commanding relations). Marantz (2001) proposes that roots are individuated in syntax, by merging with a categorising head n/v/a determining its lexical category (§ 5.3 above).

By analysing suppletive forms, Harley (2014) argues that roots must be specified in the syntax to some extent in order to account for competition of VIs for the same root node. However, she shows that the individuation is neither semantic nor phonological. Pfau (2009) reaches the same conclusion, though allowing for some specification. On the bases of spontaneous speech errors, he considers that the selection of the proper VI must be guided by some sort of semantic conceptualisation depending on the message the speaker wants to convey. He concludes by proposing that "[…] the roots which are selected from List 1 bear indices according to what lexical concept they refer to […]" (Pfau 2009: 90). Similarly, Acquaviva (2008) proposes that, before VI, roots function as differential indices, acting "[…] as name-tags which define identity and difference." (Acquaviva 2008: 15). Harley (2014) follows Acquaviva (2008) and Pfau (2009) but conceives the individuating index as a numerical notation guiding the association of the proper VI at PF. To be more specific, roots in List 1 are $\surd_{135}$, $\surd_{82}$, etc. At Vocabulary Insertion, VIs are associated with roots according to the index. In the same vein, the meanings in List 3 are defined. The association of both phonological and semantic information applies if the root is in a given (specific) morphosyntactic context. I illustrate this process with an example provided by Harley (2014: 15).

(153) a. $\surd_{279} \leftrightarrow$ /tejp/ b. $\surd_{279} \leftrightarrow$ "tape"

(153a) provides the proper VI to be associated with the root, whereas (153b) provides the interpretative instructions. Notice that conditions on insertion can be defined anyway, despite the indexed root. The crucial point is that, in so doing, roots are activated on the basis of their meaning, but this does not imply that semantic features are present from the beginning of the computation. Rather, the computational system sees that roots can be semantically individuated, but this is maintained to happen post-syntactically by association with the interpreting instructions contained in List 3 (Pfau 2009: 91). This reminds of Marantz (1997), who already assumed that roots are endowed with some sort of semantic content, such as [±count], [± animate], thus arguing that roots bear "special meaning" (Marantz 1997: 212) leading to the correct association with the dedicated VI at the end of the derivation.

Current studies adopting the DM framework follow Pfau (2009) in assuming that roots bear some conceptual content, but see Siddiqi (2006) for an alternative view.

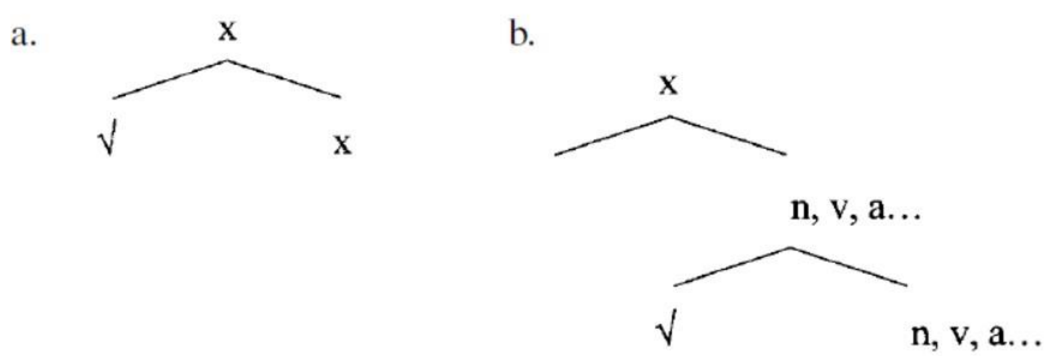
In § 5.4.1, I follow Marantz (1997) and Pfau (2009) and provide a tentative derivation for simultaneous evaluative constructions in LIS. But before proceeding to LIS, it is necessary to consider the analysis of word-formation processes proposed by Arad (2003), who considers diminutive morphology in Hebrew (§ 5.3.2), and the study on the diminutive morphemes elaborated by De Belder et al. (2014) (§ 5.3.3).

5.3.2 Word-formation processes (Arad 2003)

Arad (2003) focusses on two different types of word formation processes: formation from roots and formation from words. The author follows the common assumption of DM and considers roots to be atomic elements lacking functional material. In List 1, roots are not 'words' in the common sense. They must merge with a category head *n/v/a* in order to become words with a specific lexical category: a noun, a verb or an adjective, respectively. The categorising head constitutes the local licensing environment in which the root can be assigned an interpretation.[25] After this, the newly formed and categorised word can further merge with other functional heads above it. The structures of the two processes are illustrated below (Arad 2003: 738).

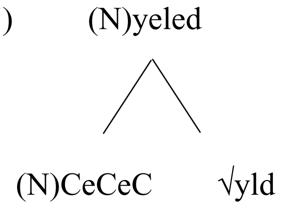
[25] Marantz (2001) assumes the categorising head to be a phase at which the root is sent to Spell-Out for interpretation. I do not take a position about this quite controversial issue, see Harley (2014) for some discussion. I just consider the necessity of a head to categorise the root before other features can apply.

(154)

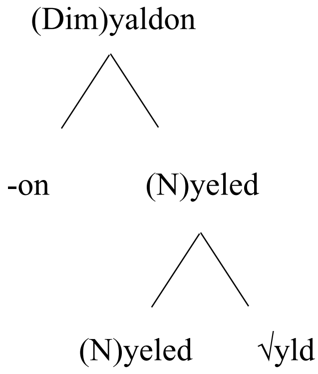


(154a) illustrates word formation from roots, whereas (154b) shows word formation from an existing word, namely, an already categorised root.

The formation from roots leads to both the categorisation and semantic specification of the root. On the other hand, formation from words implies the modification of an already specified root (i.e. a word) by means of adding other features. For instance, in Hebrew these processes are clearly visible, since it is a templatic language. Roots usually consist of consonantal segments (√CCC) which do not have a semantically fixed interpretation. They acquire their meaning depending on the morphosyntactic context in which they appear. In other words, the same root can become a noun or a verb depending on the pattern (or template) with which they combine. The pattern usually consists of vowels having a fixed position among the consonants of the root. After this, the word can combine with other morphemes (i.e. functional heads). This often leads to the derivation of verbs from nouns, but it can also involve other strategies altering some aspects of the categorised roots, for instance, they can change the lexical category, create an abstract noun out of a concrete one, change gender or encode diminutive features. This is illustrated below. The root √yld associated with the template CeCeC results in the noun *yeled* ‘child’. *Yeled*, then, can combine with other heads and the final meaning of the resulting form is semantically related to that of the noun ‘child’, without having access to the root √yld anymore. For instance, *yeled* can combine with the suffix *-on,* encoding diminutive features, and result in *yaldon* ‘little child’ (vowel changing is a post-syntactic phonological readjustment). I show the structures for the two derivations below.

(155) 

yeled
'child'

(156) 

yaldon
'little child'

De Belder et al. (2014) build on these assumptions and implement the proposal by assuming the existence of a dedicated projection hosting the diminutive feature above the categorising head. This is illustrated in the next section.

5.3.3 Low and high diminutive (De Belder et al. 2014)

De Belder, Faust & Lampitelli (2014) provide an analysis of diminutives within the theoretical framework of Distributed Morphology, specifically, they adopt the implementations developed in Embick & Noyer (2007).

They consider diminutive morphemes in Italian and Hebrew and argue that they reflect the existence of two different projections dedicated to diminutive features: one below and one above the categorizing head little x. The double nature of diminutives is correlated to the meaning they encode, which can be compositional (157) or non-compositional (158).

(157) *Nas-in-o* (Italian)
nose-DIM-M.SG
'Small nose' (De Belder et al. 2014: 1)

(158) *Pan-in-o* (Italian)
bread-DIM-M.SG
'Sandwich' (De Belder et al. 2014: 1)

As the examples show, the Italian diminutive morpheme *-in-* encodes different meanings: in (157) it defines the size of the nose, thus denoting a smaller version of the base noun; on the other hand, in (158) it contributes to the formation of a lexical item, therefore it does not encode size. The different behaviour of the morpheme *-in-* can be formalised in terms of syntactic derivation. More specifically, the authors argue that the compositional diminutive, namely the morpheme encoding size as in (157), belongs to the head of a functional projection, called *SizeP*, situated above the categorising head n. On the other hand, when the morpheme *-in-* is used non-compositionally, it belongs to the head of a lexical projection, called *LexP*, located below the categorising head. Crucially, the head Lex° directly merges with the root. In so doing, the categorising head defines the lexical domain, below x, reserved to non-compositional lexical meaning, whereas the functional domain, above x, hosts functional projections leading to compositionality of the final complex word. The hierarchy proposed by the authors is the following.

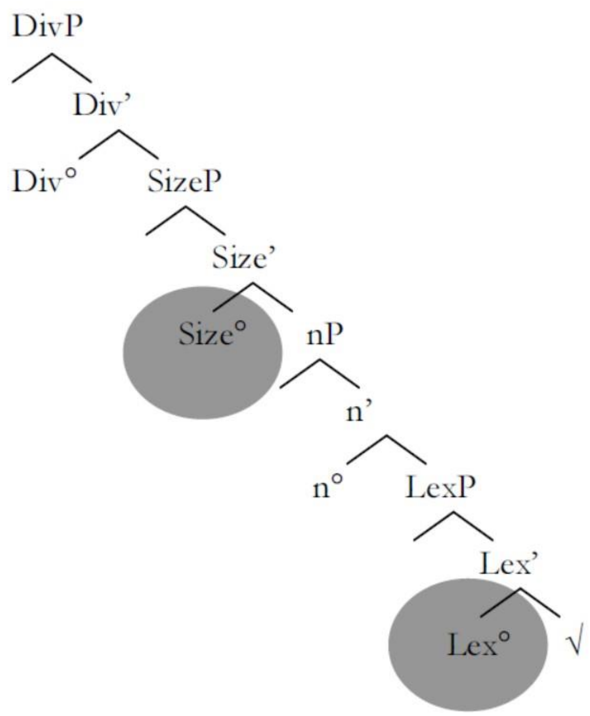


Figure 37. Low and high diminutive (De Belder et al. 2014: 1)

Empirical support for the existence of two different positions encoding the different functions of diminutive morphemes comes from the fact that also in languages other than Italian and Hebrew the non-compositional (glossed: DIM(lex)) and compositional diminutive (DIM) can: (i) involve different morphological strategies (159); (ii) occur simultaneously (160); (iii) exist independently from each other (161).

(159) *Kalb* > *klayb* vs. *klayb* > *klayb-un* (Tunisian Arabic)
dog > puppy.DIM(lex) vs. puppy > puppy-DIM
'puppy' 'small/cute puppy' (De Belder et al. 2014: 4)

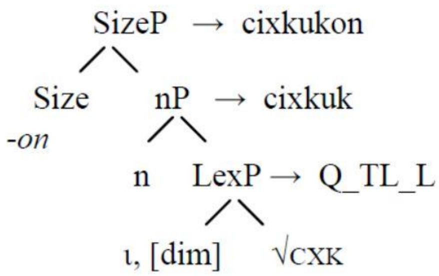
(160) *Bols-illo* > *bols-ill-ito* (Spanish)
bag-DIM(lex) > bag-DIM(lex)-DIM
'pocket' > 'small pocket' (De Belder et al. 2014: 5)

(161) *Pig* > *pig-let* (English)
pig-DIM(lex)
'piglet' (De Belder et al. 2014: 11)

(161) shows that English is endowed with a morpheme to encode the lexical diminutive, i.e. *-let*, but lacks a diminutive morpheme encoding size, though sometimes this function is fulfilled by the adjective 'little' (§ 5.2.1 above). In other words, the examples above show that languages can display both compositional and non-compositional diminutive, or display only one of them. This is in line with what was mentioned in Chapter 1, namely that languages vary in their possibility of encoding evaluative features. These alternations are allowed by Universal Grammar: languages are endowed with the same universal features (here, [size]), but they vary in the selection of which features they display (Iatridou 1990). As a consequence, a projection as SizeP hosting diminutive size feature may not exist in some languages.

To complete the picture, in (162) I report one example from a templatic language, namely Modern Hebrew (De Belder et al. 2014: 9), which displays a non-concatenative diminutive (below x) and a concatenative one (above x). The non-concatenative diminutive assigns the pattern QiTLeL to the root √cxk, thus realising the word *cixkuk* 'a giggle'. Subsequently, *cixkuk* can combine with the concatenative diminutive *-on*, thus encoding the size feature and resulting in *cixkukon* 'a small giggle'. The structure is illustrated below.

(162)



A similar derivation, despite being built within the Minimalist Framework, is the one presented by Savoia et al. (2017), who also investigate evaluatives in Italian with respect to their relation to gender and number features.

5.4 Formal derivation of LIS evaluative constructions

In this section, I discuss two possible formal derivations of LIS evaluative constructions.

Recall from Chapter 4 that LIS is endowed with dedicated non-manual markers functioning as evaluative morphemes, thus encoding diminutive, augmentative, endearment and pejorative features. The non-manual evaluative morphemes are simultaneously articulated with the manual sign, functioning as the base, and perform a modification function while encoding the evaluative alteration in size or quality, usually associated with evaluative morphemes. The base can be a lexical sign belonging to different lexical categories, it can be a noun or a SASS, which I assume to be an adjective. In so doing, these constructions are examples of evaluative morphology, in that dedicated evaluative morphemes are involved in encoding evaluative features without the need to articulate other lexical elements, such as adjectives or syntactic constructions.

Let me remind the reader of the relevant non-manuals: the diminutive feature is encoded through squinted eyes and tongue protrusion (163); the augmentative involves furrowed eyebrows and teeth on the lower lip (164); the pejorative is expressed by furrowed eyebrows and mouth corners down, sometimes accompanied by tongue protrusion (165); the endearment feature is conveyed through inner-brow raising, mouth corners slightly up and, sometimes, a head tilt to the side (166). Below, I provide visuals exemplifying each strategy.

sq+tp

(163) BOAT

'Little boat' [MI_od_32]

fe+tl

(164) CHAIR

'Big chair' [LISFT_Riccioli d'oro]

fe+md

(165) FUR

'Mangy fur' [FI_od_38]

br+mu+ht

(166) DOG

'Good dog' [GA_na_35]

The analysis of data illustrated in Chapter 4 shows that the occurrence of non-manual morphemes is phonologically and semantically constrained, depending on the feature they encode. To be more specific, endearment and pejorative non-manuals display a rather free occurrence, being able to apply to nouns referring to animate and inanimate entities, as well as to nouns referring to both concrete and abstract concepts. On the other hand, the encoding of the [size] feature, expressed by diminutive and augmentative non-manual morphemes, is more constrained. Indeed, only nouns referring to inanimate and concrete entities can function as a base for diminutive and augmentative non-manuals. Moreover, they must display specific phonological properties, defined in Chapter 4 by investigating the phonological structure of nouns within the Prosodic Model (Brentari 1998). In particular, only nouns displaying joints and thumb specifications and/or path tracing movement can encode diminutive and augmentative features by means of non-manual markers alone. Other nominal signs need a SASS to encode them. In these instances, the SASS displays both joints/thumb specification or path movement, and it functions as a lexical base for the occurrence of the evaluative non-manual morphemes. I report two illustrative examples below.

                                                                          sq+tp

(167) BACKPACK SASS(flat open 4): 'small'

'Little backpack' [FI_od_29]

                                                                          fe+tl

(168) CUP SASS(spread curved open 5): 'big'

'Big cup' [GA_od_3]

The examples clearly show that evaluative non-manual morphemes need a lexical host to occur with, otherwise their articulation is impossible. I follow Pfau (2016) in assuming that NMMs are suprasegmental morphemes, or featural affixes in the sense of Akinlabi (1996). In so doing, I assume the evaluative non-manual morphemes detected in LIS to be the phonological realisation (exponents) of the evaluative features [dim], [aug], [end] and [pej] hosted in a functional head I call 'Evaluative' (*Eval°*). I assume an Evaluative Phrase, rather than a SizeP as in De Belder et al. (2014) illustrated above (§ 5.3.3), because evaluative morphemes encode an alteration in size or quality with respect to a standard. Specifically, the assumption of an evaluative position for the size feature expressed by diminutive and augmentative morphemes allows us to distinguish diminutive and augmentative features from the size feature usually associated with the head of the APsize hosting lexical adjectives in other frameworks (Cinque 2005; 2010).

In the next sections, I discuss two possible derivations for evaluative constructions in LIS.

5.4.1 Derivation within the DM framework

By adopting a DM perspective, each evaluative feature has a specific phonological realisation through dedicated Vocabulary Items, as illustrated in (169). As is usual convention in DM, (i) the feature to be encoded is indicated between square brackets; (ii) the association between the feature and the corresponding VIs is indicated through the left-right arrow; (iii) the selected VIs are between slashes.

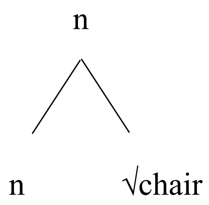
(169) Evaluative features and corresponding VIs in LIS

[dim] ↔ /squinted eyes; tongue protrusion/
[aug] ↔ /furrowed eyebrows; teeth on the lower lip/
[end] ↔ /inner brow raising; mouth corners up; head tilt/
[pej] ↔ /furrowed eyebrows; mouth corners down; tongue protrusion/

Crucially, before combining with evaluative features, the root must be categorised. I follow Marantz (2001) and Arad (2003) in assuming that the root needs to be categorised by merging with a categorising head. This assumption allows us to distinguish between words created from roots and words created from existing words (namely roots already merged with some categorising-head), thus distinguishing the morphological processes at play. I follow Arad (2003) and De Belder et al. (2014) in assuming that Eval°, the functional head hosting [dim], [aug], [end] and [pej] features, is above the categorising head.

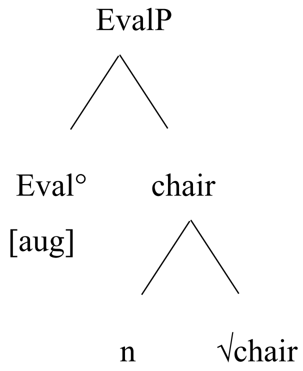
The derivation proceeds as follows. First, the root merges with the functional head 'n' to be categorised. In (170), I illustrate the categorisation of the root (for example the sign CHAIR in (163) above) becoming a noun.

(170)



Once that they have been categorised, roots can merge with other heads. By assuming that Eval° is above the categorising head, it follows that the categorised root merges with the features in the head Eval° in order to take the evaluative features. This is illustrated below.

(171)



I follow Marantz (1997) and Pfau (2009) in assuming that the root is endowed with some semantic concepts. Specifically, I assume that the root is characterised by the features [± animate] and [± concrete]. The features of the root undergo fusion with the features of the Eval° head. Therefore, the bundle of features {√root, [±animate], [±concrete], [aug/dim/end/pej} is sent to Spell-out and is ready for Vocabulary Insertion. At this point, the VIs indicated in (168) above compete for insertion. I argue that their association is regulated by specific rules (Embick & Noyer 2007; Pfau 2009) defining the condition of insertion (§ 5.3 above). Specifically, I distinguish two spell-out rules regulating the occurrence of VIs for diminutive and augmentative features on the one hand (172), and the occurrence of VIs for endearment and pejorative features on the other (173). These are formalised below.

(172) Rules for insertion of diminutive and augmentative VIs in relation to [aug]/[dim]

[aug] ↔ furrowed eyebrows; teeth on lip / {X} [-animate; +concrete]
[dim] ↔ squinted eyes; tongue protrusion / {X} [-animate; +concrete]

where X is a root like {√chair, √whiskers} that display joints/thumb specification and/or path tracing movement.

(173) Rules for insertion of endearment and pejorative VIs in relation to [pej]/[end]

[pej] ↔ furrowed eyebrows; mouth corners down / {X} [±animate; ±concrete]
[end] ↔ inner brow raising; mouth corners up / {X} [±animate; ±concrete]

The rules in (172) indicate that diminutive and augmentative Vocabulary Items can be inserted if the root corresponds to inanimate and concrete referents, and the corresponding nominal sign displays specific phonological properties allowing for the encoding of the size feature. On the other hand, the rules in (173) allow to account for the less constrained nature of endearment and pejorative non-manual morphemes, by showing that the associated VIs can occur with roots referring to different types of entities: animate, inanimate, concrete or abstract.

To illustrate, consider for instance the derivation in (171). The root √chair is endowed with the feature [-animate] and [+concrete]. After fusion with the [aug] feature, the bundle of features to be phonologically realised at Vocabulary Insertion is: {√chair, [-animate], [+concrete], [aug]}, which corresponds to dedicated Vocabulary Items, as illustrated in (174).

(174) {√chair, [-animate], [+concrete], [aug]} ↔ /chair;
teeth on the lower lip;
furrowed eyebrows/

Now let's assume that instead of √chair we have the root √backpack. This is endowed with the same features [-animate] and [+concrete] and can merge with the [aug] feature. However, the insertion of the dedicated augmentative VI is blocked because the nominal sign BACKPACK does not respect the condition formalised in (172) since it does not have joints specification (§ 4.2.3).

In § 4.4, I argue that the modifications of the manual signs to encode diminutive and augmentative features by augmenting/reducing the distance between the hands, proximalising/distalising the movement or changing the hand configuration are reminiscent of the phonological modifications that some spoken languages display in the presence of evaluative morphemes. Here, I reconsider my assumption by arguing that these phonological modifications are readjustments happening in List 3, the Encyclopedia, at the moment of associating the semantic interpretation to the result of the syntactic computation. As a matter of fact, the phonological modifications considered are gradient and are mainly employed to depict the size of the referent. Therefore, it is plausible to assume that they are guided by the world-knowledge, and thus apply in List 3, rather than being motivated by syntactic or phonological reasons. What is sure is that they are operations happening post-syntactically.

In this section, I have shown how the tools of DM easily allow to account for the strategies of simultaneous evaluation detected in LIS. Specifically, the assumption of features and roots with some semantic content has revealed to be crucial in order to account for (i) the possibility of only some roots to undergo simultaneous morphology, formalised with the conditions on insertion in (172) and (173), and (ii) the phonological modifications of the manual signs happening post-syntactically. Moreover, I have shown how the model proposed by Arad (2003), which she assumes to be universal, holds for LIS as well, with the only difference being the nature of the VIs associated as exponents of evaluative features.

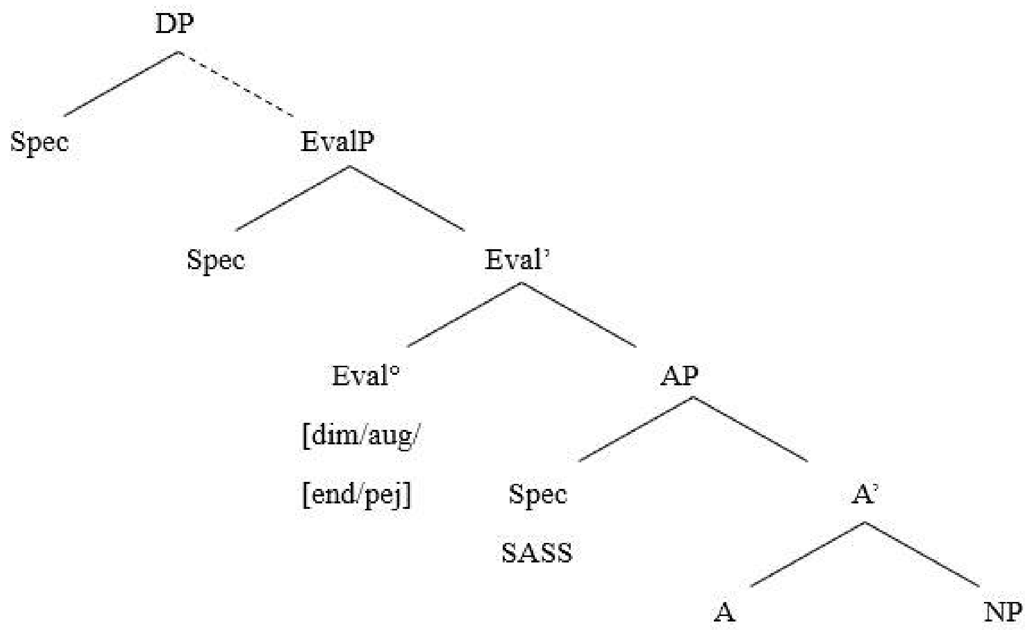
However, other issues seem to be better explained by integrating a more cartographic-like perspective in which evaluative features belong to a functional projection within the extended projection of the NP. This is discussed below.

5.4.2 A mixed alternative

Despite being quite explicative, the derivation in § 5.4.1 above needs to be extended. I have discussed the encoding of evaluative features by nominal signs. However, the derivation above should also be able to account for the strategies of sequential evaluation, in which a SASS follows the nominal sign and encodes the evaluative feature. In Chapter 4, I claim that the SASS is selected to encode the size feature when nouns cannot do so. Crucially, often the selection of the SASS is semantically motivated, in that it is selected considering the shape of the entity. Moreover, the SASS always follows the noun, therefore, we should define a derivational model that can account for both the encoding of evaluative features and the linear order of elements.

One possible solution is to consider the extended projection of the noun phrase, the DP (Determiner Phrase), and assume the existence of (i) an Evaluative Phrase (EvalP), and (ii) an adjectival projection (AP) whose Specifier position is filled with the SASS (I consider adjectives to be phrases, following Cinque 2005; 2010). In the lower part of the projection there is, of course, the Noun Phrase (NP). The structure is illustrated below.

(175)



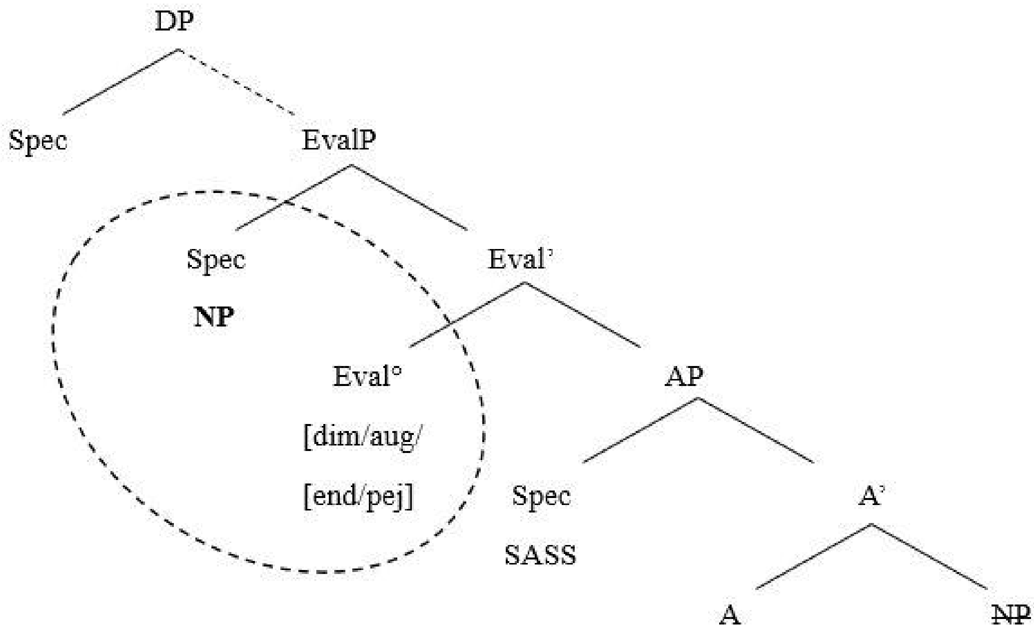
So, for instance, consider the example of simultaneous morphology in (164) above, reported here as (176).

    fe+tl
(176) CHAIR
'big chair'

According to the structure above, the NP moves with phrasal movement towards the specifier position of EvalP,[26] where it receives the evaluative features in a Spec-Head relation.[27] This is illustrated below.

[26] Notice that I do not assume the existence of different functional projections dedicated to evaluative features since their simultaneous encoding in LIS does not allow to account for, nor to verify, the order proposed for spoken languages in Cinque (2015).
[27] This is reminiscent of the analysis developed by Pfau (2016) to account for Topic Marking in sign languages. I am aware that the derivation argued for by Pfau (2016) is intended for a syntactic, rather than a morphological encoding. However, since the functional spine above the NP can include morphological

(177)



On the other hand, the sequential strategies, namely when the noun is followed by a SASS encoding the evaluative features, would be derived as follows. The NP rises to SpecEvalP to get the evaluative feature and is sent to spell-out. The insertion of augmentative or diminutive VIs is blocked since the conditions on insertion (172) are not respected. Therefore, the computation continues by merging a SASS in SpecAP, which moves to SpecEvalP to get the evaluative features from Eval° under Spec-Head Agreement.[28]

In so doing, the assumption that evaluative non-manuals are featural affixes can hold, since the Spec-Head relation would provide the lexical hosts they need to be coarticulated with. In other words, by assuming the derivation in (177) we can account for both simultaneous and sequential strategies detected to encode evaluative features.

Nevertheless, in a Lexicalist approach such as Cartography, these derivations start from lexical items, already complete with phonological and semantic information, rather than from bundles of features which need to undergo late insertion, as assumed by DM. As a consequence, it is more difficult to account for the phonological and semantic processes happening post-syntactically (such as modification of the manual nominal sign

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processes, such as evaluation, as shown in Cinque (2015) (§ 5.2.1), I believe it can be applied to evaluative morphology as well.

[28] However, the movement of the NP remains to be completely understood. It could be assumed that, after having blocked the assignation of augmentative or diminutive VIs (since the phonological conditions required are lacking), the computation starts again with this information, thus leading to merge of the SASS. In any case, the derivation needs further investigation.

to encode diminutive and augmentative features) and for the constraints preventing the noun with [+animate] [-concrete] features to undergo manual simultaneous evaluation, since 'common' models such as Cartography or Minimalism do not assume rules of insertion.

These 'obstacles' can be overcome by assuming a mixed model, which integrates the tools of DM with the functional spine regulating the order of elements within the NP, as assumed by Cartography. To be more specific, I propose a combination of the derivation in (175-177) with the proposal of derivation within DM elaborated in § 5.4.1. This is reminiscent of De Belder et al. (2014). Therefore, the derivation in (175) would start with the selection of features and roots lacking phonological content but endowed with some semantic concepts, such as [± animate] and [± concrete], activated at the beginning of the computation. I maintain the existence of a spine of functional heads above little x, whose realisation involves morphological processes modifying the structure of words after they have been categorised (in the sense of Arad 2003). Morphological processes are guided by the syntactic engine, which combines features through movements and then leaves the resulting forms to undergo Late Insertion of both phonological and semantic interpretation, by association with the proper VIs and the elements of List 3, respectively. The association of VIs is regulated by the rules of insertion defined for evaluative features in § 5.4.1. In so doing, we should be able to account for all the strategies detected, as well as the phonological constraints and semantic processes at play. However, many issues remain open and thus call for future investigations.

5.5 Conclusions

The present chapter has discussed the formal derivation of LIS evaluative constructions, by considering two different models of syntactic derivation built within the Minimalist Framework: the Cartographic Approach and Distributed Morphology. It results that a mixed model, adopting features of both approaches, is helpful in accounting for the strategies detected in LIS to encode diminutive, augmentative, endearment and pejorative features. Specifically, the assumption of bundles of features and roots as a starting point for the syntactic derivation has revealed to be crucial in allowing to account for the simultaneous occurrence of non-manual evaluative markers with manual nominal signs.

Moreover, it allows us to assume the same derivation structure for both sign and spoken languages, since the features to be encoded are the same. What differs is the nature of the Vocabulary Items to be inserted for their phonological realisation. The rules of insertion, that can be assumed under the DM approach, allow for a straightforward specification of the contexts in which non-manual morphemes can occur. To do so, it was necessary to assume that some semantic features, such as [animate] or [concrete] are activated in List 1, despite being realised later. In so doing, LIS provides evidence for the proposal advanced by Pfau (2009) and followed by Harley (2014). In addition, by assuming the existence of the Encyclopedia, we can explain the gradient nature of the modifications of manual signs to encode diminutive and augmentative features, which is in line with the proposal advanced in § 4.2.3.1. Nevertheless, the assumption of projections dedicated to evaluative features and SASSes, within the extended projection of the NP, was also necessary in order to account for the linear order of the SASS with respect to the noun in sequential evaluative strategies.

To sum up, it is evident that further research is needed to improve the proposal. What seems to be quite clear, though, is that by assuming a unique syntactic engine and bundles of features and roots undergoing late insertion, we can easily account for different morpho-syntactic processes in both sign and spoken languages. Therefore, this chapter concludes the analysis of evaluative constructions in LIS by adding the syntactic derivation to the phonological and morphological analysis, but it also prepares the path for future investigation.

Conclusions

In this dissertation, I explored the display of evaluative features in LIS. Specifically, the research study I developed aimed at answering four research questions (RQs), which I repeat here for the reader's convenience:

RQ 1: Does LIS, being a visuo-gestural language, encode evaluative features? If so, which are the strategies employed to encode them?
RQ 2: Do evaluative morphemes (if any) in LIS display polysemy? Does LIS provide some evidence to the issue of embodied cognition (§1.3.2)?
RQ 3: Do the evaluative constructions detected in LIS respect the typological properties defined for spoken languages despite the different modality employed?
RQ 4: Can evaluative constructions be accounted for in formal structures?

In order to properly answer these questions, I analysed both corpus and elicited data. The corpus consisted of 22 fairy tales produced in LIS by three native signers. On the other hand, elicited data consisted in three tasks of object description, narration of a picture story and grammaticality judgments proposed to 5 LIS native signers.

The combination of corpus and elicited data aimed at creating a consistent dataset for the investigation of the display of evaluative features. To be more specific, the tasks for the elicitation of new data were specifically designed in order to analyse the encoding of evaluative features in nominal signs displaying different phonological properties (for instance, one vs. two-handed signs, articulated on the body or in the signing space, etc.) as well as different semantic properties: concrete vs. abstract, animate vs. inanimate.

Moreover, grammaticality judgments were necessary to explore the correspondence between evaluative markers and the lexical adjectives corresponding to the semantic primitives BIG, SMALL, GOOD, BAD (Grandi 2002).

The data collected were analysed against three different theoretical backgrounds: Generative Linguistics, Cognitive Linguistics and Linguistic Typology. I decided to combine three arguably opposing frameworks because it was necessary to gain a complete picture of the phenomenon. The starting assumption was that evaluative features belong to the set of innate features made available by Universal Grammar. In so doing, I predicted that if they really are universal, they should be encoded in a language conveyed in the visuo-gestural modality as well. In the same vein, it should be possible to account for the strategies employed to encode these features with the same syntactic models used for the analysis of evaluative constructions in spoken languages. Moreover, by looking at the studies carried out within the cognitive tradition, which argue that concepts such as size are expressed through language because they are bodily perceived, I predicted that a sign language, which exploits manual articulators to convey linguistic information, could provide clear evidence for the issue of embodied cognition.

Along these lines, I first conducted a morphophonological analysis of the data collected, which revealed that LIS employs two strategies to encode evaluative features: simultaneous evaluation and sequential evaluation. Simultaneous evaluation comes in two types: (i) manual simultaneous evaluation consists in the articulation of dedicated non-manual markers for diminutive and augmentative features with the manual nominal sign, which shows phonological modifications such as distalisation/proximalisation, handshape change or augmented/reduced distance between hands; (ii) non-manual simultaneous evaluation consists in the articulation of specific non-manual markers modifying the manual nominal sign in order to encode endearment or pejorative features. On the other hand, sequential constructions involve the articulation of the manual nominal sign followed by a SASS or an entity classifier marked by the dedicated non-manuals detected. Specifically, the data show that: (i) the diminutive feature is expressed through squinted eyes and tongue protrusion; (ii) the augmentative feature corresponds to furrowed eyebrows and teeth on the lower lip; (iii) the endearment feature is conveyed through inner brow raising, mouth corners up and, sometimes, a head-tilt on the side; (iv) the pejorative feature is realised through furrowed eyebrows and mouth corners down, sometimes with tongue protrusion.

Crucially, the simultaneous occurrence of diminutive and augmentative non-manuals with the manual nominal sign (i.e. manual simultaneous evaluation) turned out to be semantically and phonologically constrained. To be more specific, the size feature can be encoded through manual simultaneous evaluation only with nominal signs referring to concrete and inanimate entities, displaying specific phonological features: (i) they must have the joints or thumb specified for the features [flexed] and [opposed], respectively; (ii) they must display path [tracing] movement instead of secondary movement. In contrast, pejorative and endearment non-manuals can occur both with signs referring to abstract/animate referents, and with signs not necessarily displaying the aforementioned phonological features. This alternation has been explained in cognitivist terms. Indeed, pejorative and endearment features do not involve the feature of size, therefore they do not need a nominal sign which can actually represent it. Support for this 'necessity' of visually encoding [size] came from the fact that nominal signs that could not be phonologically modified in order to encode it required the articulation of a SASS which could, instead, specify the size feature. This 'cognitivist-type' explanation seems to find support even within the formal derivation proposed in Chapter 5. There, I show how the syntactic derivation of evaluative constructions in spoken languages developed within the Distributed Morphology framework could be employed to account for LIS data as well. Indeed, DM implies the existence of a list, the Encyclopedia, which includes real-world knowledge and associates meanings to the objects of the syntactic derivation, which means that the association of meaning is post-syntactic. In this respect, I argue that the manual modifications detected in the presence of diminutive and augmentative morphemes happen at Encyclopedia, namely, after that the system has computed the presence of the size feature. When it comes to associate meaning, the system allows for further phonological (post-syntactic) modifications guided by our sensory knowledge, leading LIS to represent size thanks to the available articulators. This is also the reason why the same modifications are not attested with endearment and pejorative features, since there is no [size] to express. What is crucial here is that the sign language-specific possibility of representing size, which seems to be a gestural rather than linguistic fact, is actually guided and constrained by linguistic principles. If this is on the right track, simultaneous evaluative constructions in LIS provide evidence for the possible combination of Cognitivist and Generativist approaches and support non-Lexicalist theories involving a single syntactic force guiding the derivation.

The morphophonological analysis also allowed to argue that the non-manual markers encoding the evaluative features are indeed evaluative markers: (i) they carry meanings related to the semantic primitives BIG, SMALL, GOOD, BAD; (ii) they perform a modification function while expressing the alteration with respect to the standard value indicated by the manual sign. Moreover, I argued that the non-manuals detected are evaluative bound morphemes because: (i) they cannot occur alone; (ii) they display the constraints on scope, timing, discreteness and obligatoriness defined for linguistic non-manuals (Dachvosky 2007); (iii) they are productive among different signers. Asking for grammaticality judgments to informants was crucial in order to verify that the NMMs detected are actual evaluative morphemes and that they are not lexically specified for the adjectives corresponding to the semantic primitives. In other words, they are not non-manual adjectives but rather dedicated morphemes encoding the alteration specified by the evaluative feature.

Further attention was dedicated to sequential constructions in order to understand whether the classifiers following the nominal signs function as bound morphemes, as claimed by Petitta et al. (2015) in their preliminary study. I specifically concentrated on the strategies involving the articulation of a SASS to encode diminutive and augmentative features because they were more frequent than those involving entity classifiers, and because the literature on SASSes in LIS is quite scattered. In order to fill the gap, and to better understand the nature and function of these elements, I developed a further elicitation task. The results showed that the SASSes in evaluative constructions are not bound morphemes, since they can be separated from the base. They rather function as adjectives which can appear in predicative or attributive structures. The study was also important to finally clarify the handshapes that can be used in LIS to produce SASSes, and to specify the differences between SASSes and entity classifiers. Therefore, I argued for the existence of two types of SASSes in LIS: (i) *static SASSes*, namely one- or two-handed signs specifying information of size and shape of referents without displaying tracing movement; (ii) *tracing SASSes*, namely one- or two-handed signs conveying information of size and shape of referents by outlining their shape through movement. The crucial difference with entity classifiers is that movement in SASSes never reflects the movement of the referent.

Having defined the adjectival nature of SASSes, it followed that the sequential constructions detected are not strictly morphological and thus do not really belong to the domain of evaluative morphology, because they involve a lexical item (here, an adjective) expressing the evaluative feature instead of a bound morpheme. Nevertheless, they do belong to the more general domain of evaluative constructions for their possibility of being employed as a base for the occurrence of evaluative non-manuals. In so doing, LIS is typologically similar to those languages which can employ both analytic and synthetic strategies to express evaluative features.

Moreover, LIS evaluative constructions were shown to respect the properties defined by typological studies carried out on spoken languages: (i) they are employed to encode the semantic primitives BIG, SMALL, GOOD, BAD; (ii) they display a modification function by altering the semantics of the base sign and conveying a qualitative or quantitative evaluation with respect to a standard; (iii) they respect both the formal and semantic conditions by including both the standard (the manual sign functioning as a base) and the evaluative marker (the non-manual morphemes) carrying the evaluative alteration; (iv) they display phonological and semantic constraints.

By adopting both sequential and simultaneous strategies, evaluative constructions in LIS confirm the generalisation advanced by Aronoff et al. (2004; 2005), who argue that sign languages constitute a morphological type for their possibility of displaying both strategies simultaneously. This also allowed LIS not to display the ambiguity of meaning usually attested in diminutive and endearment morphemes. Indeed, the opportunity of exploiting both manual and non-manual articulators simultaneously allows to encode the diminutive and endearment features separately: diminution is encoded in the manual sign displaying a reduced articulation, whereas endearment is conveyed through the non-manual morphemes.

Evaluative constructions also conform to the agglutinative type argued for by Schuit (2007), in that the non-manual evaluative morphemes remain segmentable and identifiable despite being simultaneously articulated with the manual base.

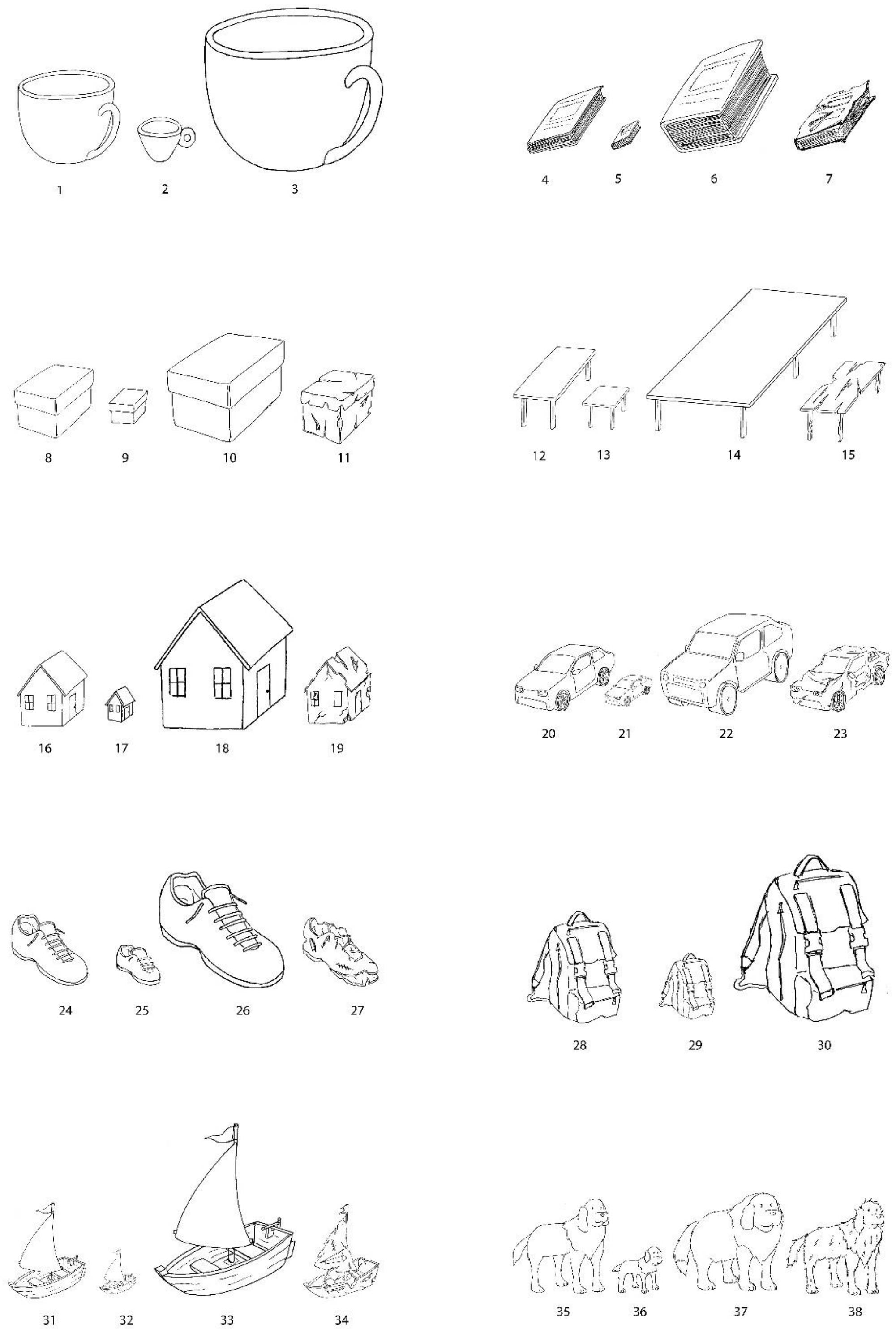
To sum up, the research study developed in this dissertation provides both descriptive and theoretical results.

At the descriptive level, it enriches the literature on morphological processes in LIS by offering a detailed description of the display of evaluative features, and by clarifying the nature and function of size and shape specifiers. Moreover, in a typological perspective, it confirms and improves the generalisations defined for the domain of evaluation by adding the strategies adopted in a visuo-gestural language.

At the theoretical level, the research shows the benefits of combining different theoretical perspectives in order to gain a deeper understanding of a phenomenon. Specifically, the generative assumption of the universality of evaluative features is confirmed by (i) the existence of these features in LIS and (ii) the possibility of accounting for their derivation by employing the same syntactic models used to derive evaluative constructions in spoken languages. To complete the picture, I argue that the modality-specific possibility of representing the innate feature of size can be fully understood by taking into account the issue of concept embodiment proposed by Cognitivism, according to which concepts are expressed through language because they are perceived. Crucially, as I understand this, the sensory experience is part of the knowledge of the world we have, and thus sensory experience and innateness appear to be connected. This connection is implied in DM, a generative framework assuming a specific list to contain meanings related to human knowledge of the world. In other words, evaluative constructions in LIS seem to constitute the ground on which aspects of Cognitive Linguistics and Generativism can meet.

Many issues remain open, but I hope this study will encourage researchers, as well as myself, to continue developing analyses with an open mind and possibly combining different points of view, with the only aim of increasing the knowledge of languages and the language faculty underneath. In this respect, sign languages are the most powerful tool in that they are an open window on the innumerate possibilities provided by Language, and they deserve to be studied, spread and recognised.

Appendix A1. Object description task



Appendix A2. Narration task

Appendix A3. Object description task (SASSes)

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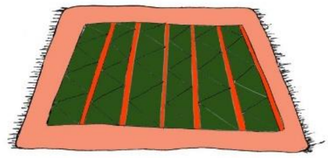

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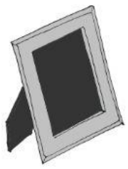

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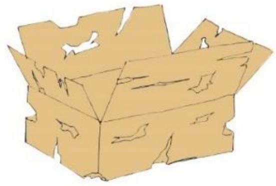

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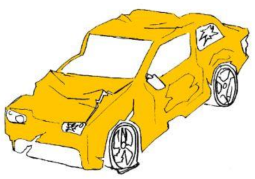

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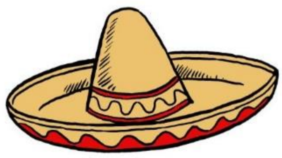

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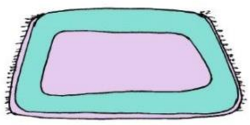

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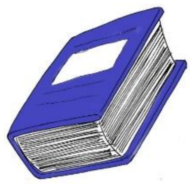

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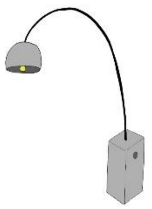

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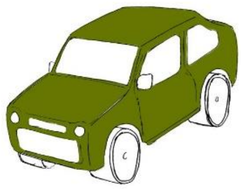

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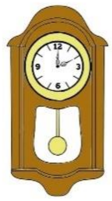

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Estratto per riassunto della tesi di dottorato

L'estratto (max. 1000 battute) deve essere redatto sia in lingua italiana che in lingua inglese e nella lingua straniera eventualmente indicata dal Collegio dei docenti.

L'estratto va firmato e rilegato come ultimo foglio della tesi.

Studente: ELENA FORNASIERO matricola: 835039

Dottorato: LINGUE, CULTURE e SOCIETÀ MODERNE E SCIENZE DEL LINGUAGGIO

Ciclo: XXXII

Titolo della tesi[1] : Description and analysis of evaluative constructions in Italian Sign Language (LIS)

Abstract:

Questa tesi offre una descrizione dettagliata della realizzazione dei tratti valutativi in LIS. L'analisi di dati spontanei ed elicitati mostra che la LIS impiega strategie di valutazione simultanea e sequenziale. L' analisi morfofonologica rivela che: ogni tratto è espresso da componenti non manuali dedicate; tali marcatori sono morfemi legati valutativi; restrizioni fonologiche e semantiche motivano l'alternanza tra strategie sequenziali e simultanee. La combinazione di approcci teorici diversi ha permesso di delineare un quadro completo del fenomeno. In ottica generativista, i risultati mostrano l'universalità dei tratti valutativi, e che la forza sintattica che deriva le costruzioni valutative nelle lingue vocali è cruciale anche in LIS; in ottica tipologica, le costruzioni valutative rispettano le generalizzazioni definite per le lingue vocali, nonostante la diversa modalità impiegata; in ottica cognitivista, i dati mostrano come la LIS faccia uso degli articolatori a disposizione per rendere visibili tratti che nelle lingue vocali rimangono astratti.

This dissertation offers a detailed description of the display of evaluative features in LIS. The analysis of naturalistic and elicited data shows that LIS exploits simultaneous and sequential strategies. A morphophonological analysis reveals that: LIS is endowed with dedicated non-manual markers for each feature; these markers are evaluative bound morphemes; phonological and semantic constraints motivate the alternation between sequential and simultaneous strategies. The combination of three different theoretical approaches was crucial to gain a complete picture of the phenomenon. From a generative perspective, the results support the universality of evaluative features and that the syntactic engine deriving evaluative constructions in spoken languages is active in LIS as well; typologically, evaluative constructions in LIS respect the generalisations defined for spoken languages, despite the different modality employed; from a cognitive point of view, data show that LIS can exploit its articulators to visually encode concepts that remain abstract in spoken languages.

Firma dello studente

Elena Fornasiero

[1] Il titolo deve essere quello definitivo, uguale a quello che risulta stampato sulla copertina dell'elaborato consegnato.