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## SIGNGRAM BLUEPRINT

A Guide to Sign Language Grammar Writing



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Current grammatical knowledge about particular sign languages is fragmentary and of varying reliability, and it appears scattered in scientific publications where the description is often intertwined with the analysis. In general, comprehensive grammars are a rarity. The SignGram Blueprint is an innovative tool for the grammar writer: a full-fledged guide to describing all components of the grammars of sign languages in a thorough and systematic way, and with the highest scientific standards.

The work builds on the existing knowledge in Descriptive Linguistics, but also on the insights from Theoretical Linguistics. It consists of two main parts running in parallel: the Checklist with all the grammatical features and phenomena the grammar writer can address, and the accompanying Manual with the relevant background information (definitions, methodological caveats, representative examples, tests, pointers to elicitation materials and bibliographical references). The areas covered are Phonology, Morphology, Lexicon, Syntax and Meaning. The Manual is endowed with hyperlinks that connect information across the work and with a pop-up glossary. The SignGram Blueprint will be a landmark for the description of sign language grammars in terms of quality and quantity.

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# SignGram Blueprint: Manual

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With the collaboration of Brendan Costello and Rannveig Sverrisdóttir

**SIGNGRAM**

## SignGram Blueprint



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# Introduction: Letter to the grammar writer

The SignGram Blueprint is a tool designed to guide language specialists and linguists as they write a reference grammar of a sign language. This tool consists of two main components: the Checklist and the Manual.

The Checklist contains a list of linguistic constructions and phenomena that a sign language grammar should contain. Thus, it can be considered as a suggestion for the table of contents of the reference grammar to be written.

The Manual, on the other hand, guides the grammar writer in four ways, by providing:

- (i) basic, background information on the linguistic constructions and phenomena listed in the Checklist;
- (ii) guidelines on how to identify and analyze these grammar points;
- (iii) suggestions for data elicitation techniques and materials; and
- (iv) relevant bibliographic information that the grammar writer can consult during his/her research.

The Manual also contains a separate sub-component, the Glossary, which provides the definitions of certain linguistic terms used in the Manual.

In the following, we describe in more detail how the grammar writer can use the components of the Blueprint. However, before we move on to that, we would like to explain the context in which the Blueprint has been created, the reasons that lead us to think it is needed, and the choices we have made while writing it. We start by briefly discussing what grammar writing involves and then continue with describing the structure of the Blueprint in more detail.

## Grammatical descriptions, why?

Sign language research has advanced rapidly over the past few decades, but it still faces an important stumbling block: the grammatical descriptions available for specific sign languages are incomplete and of varying reliability. Complete, thorough descriptions of sign languages are lacking, and this obviously has negative consequences – not only for the linguist studying a certain phenomenon (lack of knowledge about a certain undescribed aspect of the grammar might lead to a wrong characterization of a different, but related aspect), but also for a whole range of professionals who must rely on a comprehensive description of the language, such as sign language teachers of deaf children, trainers of sign language interpreters, teachers of sign language as a second language, clinicians involved in diagnosing language impairment and language pathologies, and speech therapists assessing language competence.

Writing a grammar may serve very different goals, but no matter what type of grammar is intended, the content should be as accurate and comprehensive as possible. The SignGram Blueprint is an attempt at helping the grammar writer achieve this goal. However, the form of the final grammar will, of course, depend directly on the goal that the grammar writer has set. A reference grammar of a language, which intends to be exhaustive, is a very different product, both in terms of depth and presentation, from a didactic grammar meant as a support for language learning. Therefore, the Blueprint must be considered as a tool that the grammar writer needs to adapt to his or her needs.

It should be kept in mind that the Blueprint can also be useful to describe partial aspects of grammar, for instance in graduate thesis projects, and thus does not need to be implemented in its entirety. Nevertheless, when a basic grammatical description of a language is lacking, it is sometimes hard to describe phenomena in isolation. Therefore, cooperative work should be encouraged to produce comprehensive grammatical descriptions of sign languages, which are very much needed.

## How to use the Blueprint

As mentioned above, the Blueprint has two main components: the Manual and the Checklist. The Manual has seven parts. A part covering the Socio-historical background is followed by six parts corresponding to the major components of grammatical knowledge: Lexicon, Phonology, Morphology, Syntax, Semantics, and Pragmatics. Each part starts with an introductory chapter explaining the function of the linguistic component under investigation (e.g. Morphology), the organization of the part, and suggestions on how to use it.

Subsequent chapters and major sections within each part also contain introductory subsections providing background information including definitions, classifications, and suggestions on how to overcome the methodological and analytical challenges the grammar writer might face. The remaining subsections in each chapter contain guidelines for identification and analysis of the grammar points. These are often followed by a section on Elicitation Materials. This section contains methodology and material suggestions for data elicitation. Each chapter ends with a list of bibliographic references of the literature that addresses these grammar points – be it from a general perspective or for a specific sign language.

The aim of the Manual is to guide the grammar writer in providing the descriptions of the grammar points listed in the Checklist. To make this tool user-friendly, we have striven to maintain a one-to-one correspondence between (sub-)headings in the Checklist and (sub-)headings in the Manual. The grammar writer can read the Manual as if it were an independent book or she/he can click on a heading in the Checklist to access the relevant information in the Manual. To demonstrate how the Manual may provide guidelines for the identification of a specific construction or phenomenon,

AQ: This needs to be checked



let us give an example. The Morphology Part of the Checklist contains the heading ‘2.1.2.1. Noun-verb pairs’. This corresponds to the heading ‘2.1.2.1. Noun-verb pairs’ in the Morphology Part of the Manual. In this subsection of the Manual, it is explained that a ‘noun-verb pairs’ heading in a reference grammar might be useful, since a morphological process by which action verbs can be derived from object nouns (say the verb *SIT* from the noun *CHAIR*) is attested in many sign languages. Representative examples of this morphological process from actual sign languages are given, and tests that can be used to distinguish the noun from the related verb are suggested. Finally, this subsection of the Manual contains the most relevant bibliographical references that deal with this phenomenon.

The Checklist and the Manual are offered as a suggestion and as a guide, but of course, it is up to the grammar writer to decide whether the relevant subsection makes sense in the grammar of the sign language he or she is describing. For example, if the morphological process by which verbs are derived from nouns is absent in that sign language, this section might be safely skipped. But if the grammar writer aims at putting his or her grammatical description in a typological perspective, he or she might opt to refer to the absence of such a process by contraposition to the languages that are mentioned to have it in the Manual. When developing the actual grammar for a given sign language, the grammar writer might want to depart from the structure proposed in the Checklist for a variety of reasons, both practical and conceptual. In fact, at various points of the Manual explicit suggestions are made for an alternative organization of the grammar.

In general, we expect that while the most general headings should be relevant for all sign languages (say, ‘1.2. Interrogatives’ in the Syntax Part of the Checklist and the Manual), more specific sub-headings might be relevant only for a subset of sign languages. For example, ‘1.2.3.6. Split between the *wh*-sign and its restriction’ is needed only for those sign languages in which an interrogative sign corresponding to ‘which’ can be separated from its restriction, say a noun like ‘book’.

Also, note that the different parts of the Checklist and the Manual such as Syntax and Morphology are internally structured with an independent numeration. We hope that the independence of each part will help the grammar writer who might be interested in describing just a single component, say only the morphology or the syntax of the sign language studied.

Since we hope the Blueprint will be used by a wide range of language specialists, we have made an effort to keep the language as accessible as possible, and have tried to avoid technical, linguistic jargon. We have worked under the assumption that the ‘grammar writer’, who is the main target user of the Blueprint, does not need to be a professional linguist, although we assume familiarity with basic linguistic notions and grammatical concepts specific to sign languages. We also assume that he or she is acquainted with one or more sign languages.

The Blueprint is a product of several authors. However, we made all possible efforts to harmonize the style. For example, a potential source of confusion can be

generated by the use of the term ‘word’ or ‘sign’ for the lexical unit of a sign language. As a rule of thumb, we used the term ‘sign’ except for linear order facts and some prosodic or morphological descriptions where the terms ‘prosodic word’, ‘word order’, and ‘word-internal’ will be used.

The Blueprint helps the reader with linguistic terminology in two ways: one is the Glossary. A number of linguistic terms in each section is automatically linked to the Glossary. The full list of glossary entries can also be found at the end of the Manual.

The other helpful tool is the cross-referencing between sections and parts of the Manual by means of hyperlinking. Typically, if there is a term/concept used in a section where it is mentioned but not described, a hyperlink connects it to the section where it is explained. In other cases, the section where one set of properties (for instance, syntactic properties) of a phenomenon is discussed is linked to another section where another set of properties (for instance, prosodic properties) are addressed. This will equip the grammar writer with a wider background knowledge on the topic and enable him/her to approach it from more than one angle if she/he intends to do so.

We mentioned that, in most cases, there is a one-to-one correspondence between the Checklist and the Manual. However, there are cases in which this correspondence does not hold. These cases are due to the fact that the Checklist contains only the list of linguistic features that should be described in a grammar. Therefore, the sections of the Manual that are more methodological in nature (typically, the introductory sections in chapters and major sections devoted to definitions, methodological and analytical challenges, elicitation materials, and references) do not have a correspondence in the Checklist. However, these methodological sections are numbered in a special way, so that they do not obstruct the parallel structures of the Checklist and the Manual.

The second area in which the one-to-one correspondence does not hold is due to a basic choice we made when we decided on the general design of the Blueprint. We believe that traditional grammars, even the most complete reference grammars available for better-studied spoken languages, tend to neglect the dimension of meaning. It is instructive in this regard to notice that in the average descriptive grammar, no comprehensive section is devoted to semantics and pragmatics; rather, the discussion of meaning aspects is usually distributed across sections describing formal aspects such as lexicon, morphology, or syntax.

We think that these traditional choices do not reflect recent linguistic achievements about the semantics and pragmatics of natural languages (spoken or signed). In addition, the traditional structure typically leads to a blending of formal and functional categories in the grammatical descriptions. One typical example is temporal categories. In many languages, the (formally unmarked) verbal present tense form is not only used to refer to the present but also to refer the future (and sometimes even to the past). Therefore, the grammatical category of tense must not be conflated with the semantic notion of tense. For this reason, we have devoted an entire part of the Blueprint to the elucidation of concepts related to meaning.

We present a couple of illustrative examples of why having fully developed Semantic and Pragmatics parts can be useful. The first still involves the ‘tense’ category. Some traditional grammars tend to conflate the discussion of tense and aspect, especially in languages in which the same morpheme express both a tense and an aspect specification. Unlike more traditional grammars, the Manual includes two sections in which these concepts are explained from a formal perspective and a meaning perspective. As the sections on tense and aspect are already present in the Morphology part (form) of the Checklist, in order to avoid a duplication, there is no Semantics part (meaning) in the Checklist, but the relevant semantic notions are displayed in the Semantics part of the Manual for the grammar writer as important background information for investigating their potential morphological realizations in the target language.

Similarly, a section called ‘conditional clauses’ is only present in the Syntax part of the Checklist describing possible formal aspects of such clauses. Nevertheless, the Manual contains a section in the Semantics part about the meaning of conditionals, since we think that a proper description of this construction cannot leave out the meaning dimension. However, other aspects of meaning, especially those related to pragmatic aspects of meaning such as discourse structure, figurative meaning, and communicative interaction, do have a counterpart in the Checklist, because it is justified to have them as free-standing sections in a descriptive grammar. Since all semantic concepts are also addressed from a formal perspective in the Lexicon, Morphology, and Syntax parts, the Checklist does not contain a part on Semantics. By contrast, the part on Pragmatics discusses aspects of meaning beyond the sentence level and is therefore included in the Checklist. With the general move to treat semantic and pragmatic aspects on an equal footing with other grammar components, we mean to boost description and analysis of semantic and pragmatic properties in signed languages, which have lagged behind until quite recently.

## Methodological choices

We mentioned previously that we have adopted a plain, non-technical style, and that it is our hope that non-professional linguists will also be able to use the Blueprint. However, we must stress that this choice is not due to an anti-theoretical or anti-formalist attitude. On the contrary, the scientific directors of the Blueprint are all formal linguists who are convinced that no adequate empirical description is possible without the lens provided by modern linguistic theories. An a-theoretical description does not exist. What is considered a-theoretical is often a description that assumes commonsense, naïve conceptions, instead of more sophisticated notions from current linguistic theories that invariably help sharpen the empirical description. Therefore, the organization of the Checklist and the content of the Manual is *implicitly* theory-driven. Although the specific analyses that informed our choices are not at the center

of the stage, they can be retrieved by looking at the references that close each chapter of the Manual. This sometimes has a relative influence on the terminological choices made here (for instance, the term ‘agreement verb’ is used), but alternative denominations existing in the literature are also mentioned (‘directional’ or ‘indicating verbs’ for the example at hand).

A question that naturally arises when one projects a skeleton for sign language grammars is to what extent this should be similar to a grammar for spoken languages. The issue is tricky, even more so because no comprehensive reference grammar for any sign language exists yet. We have started from the assumption that sign languages are the products of the same language faculty that gave rise to spoken languages. So in principle, the main analytical categories that have been elaborated in the linguistic research on spoken language (for example, phonological features, verbal inflection, subordination, or implicature) and that have been fruitfully applied in spoken language research should be useful categories for sign languages as well. Thus, in those cases in which there is no sufficient information on how sign languages express a certain grammatical concept or construction, we referred to the findings on typologically diverse spoken languages, keeping in mind that if a certain linguistic phenomenon or construction has been observed in a group of spoken languages, it has the potential to be observed in the sign language studied.

Such transfer from the generalizations on spoken languages is undoubtedly useful; however, it is not sufficient. It is also very well known that the visuo-spatial modality does shape the way language is expressed, and new, modality-specific categories should at times be employed to describe sign language phenomena (for example, non-manual marking, classifier predicates, and role-shift). It is an open question whether these categories are really unique to the signed modality or correspond to mechanisms that are present in spoken languages, albeit in a less prominent form, thus having led to their exclusion from spoken language grammars. These types of questions are very important, but the Blueprint is not the place to find answers to them, since our goal is to offer adequate descriptive tools rather than to investigate the underlying issues. Thorough descriptive work on many more sign languages will hopefully contribute to (partially) answering those questions at some point by relying on more solid empirical ground. A separate issue concerns iconicity. The fact that some signs incorporate iconic features has consequences for the structure of the grammar at all levels. However, the effects of iconicity are not the same in the lexicon and in syntax, for instance. Thus, rather than having an independent section on iconicity, we decided to discuss its effects whenever they are immediately relevant for a specific aspect of the grammar or a grammatical phenomenon.

At first sight, the Checklist may look superficially similar to the table of contents of a reference grammar of a spoken language. However, we would like to stress that a category identified in spoken language may involve different exponents and linguistic processes in sign language. The Manual contains multiple examples of this where such differences are highlighted and explained in detail. For example, while compound is a

standard grammatical concept in morphology and is found in the Checklist, its application to sign languages raises some non-trivial questions. One is how to analyze compounds with multiple articulators that work in parallel and relatively independently from each other, for example, those in which one hand articulates (part of) one sign while the other one simultaneously articulates (part of) another sign.

As a final note on the Manual, we would like to point out that the current state of the art in sign language research has had some effect on the varying degree of detail across chapters and sections. Where necessary, we have tried to compensate for the existing gaps on the basis of the available linguistic information on spoken languages, as mentioned above. The grammar writer interested in further deepening his or her grammatical knowledge is encouraged to consult the selection of bibliographic pointers included at the ends of sections and chapters.

In some cases, original research has been conducted specifically for the preparation of the Blueprint, since the phenomenon to be described had not been explored at all for sign languages. In these cases, the original findings are the starting point for the relevant section. This is the case, for instance, in the section on imperatives in the Syntax part.

## The Blueprint and the SignGram COST Action

The Blueprint is the main product of the SignGram COST Action (Action IS1006 “Unravelling the grammars of European sign languages: pathways to full citizenship of deaf signers and to the protection of their linguistic heritage”, website: <http://signgram.eu>). COST is a European network of nationally funded research activities which aims to promote and finance cooperative scientific projects with a specific goal. The SignGram COST Action started in 2011 and ended in 2015; its main goal was the creation of the Blueprint. Researchers from 13 COST countries (Austria, Denmark, France, Germany, Greece, Iceland, Italy, Netherlands, Norway, Poland, Spain, Turkey, and the United Kingdom) and two COST International Partner Countries (Argentina and Australia) took part in the Action. COST funded the following scientific activities: the meetings in which the design of the Blueprint was discussed and decided, scientific missions between the partners, and summer schools for junior researchers who want to start working in the sign language field, as well as four editions of a conference that has become a major venue for sign language researchers (FEAST, Formal and Experimental Advances in Sign Language Theory). Another activity promoted by the SignGram Action is the creation of a repository of materials that have been used for the elicitation of signs or structures by researchers in Europe and beyond. The repository can be found at the following link:

<https://corpus1.mpi.nl/ds/asv/?jsessionid=A0026AAA3C521F75EC5ADF8C93354297?0>.

Finally, COST has made it possible for the Blueprint to be freely available to everyone as an open-access publication.

It is important to highlight that the new research project SIGN-HUB (2016–2020) funded by the Horizon2020 program of the European Commission has as one of its goals to implement the Blueprint to write on-line grammars of the following sign languages: DGS, LIS, LSE, LSC, NGT, and TİD. This will make it possible to have the grammatical descriptions directly online and available to everyone once they have been validated.

## The social dimension of the Blueprint

When we started the *SignGram* COST Action, we were motivated by scientific questions, since we are linguists. However, as is often the case for linguists working on neglected and ostracized languages (and sign languages still belong to this category!), we also had in mind a social dimension. This is what we wrote in the application we submitted to COST in 2010:

“Despite significant advances, linguistic knowledge of languages in the visuo-gestural modality is still sketchy and incomplete. This becomes an unsurmountable handicap when inclusive educational policies are proposed, as no reliable grammatical descriptions are available that could constitute the appropriate basis for curriculum development and teaching materials in bilingual-bicultural programmes, sign language (SL) teaching or SL interpreter training. As a result, the responsibility of describing the basic aspects of SLs for educational practices has been frequently left in the hands of teachers of the deaf, language therapists or SL teachers and interpreter trainers, who understandably often lack the required background. Only the best possible education in their SL, though, does guarantee personal development and full exercise of civil, linguistic and ultimately human rights for deaf signing individuals. This action aims to provide scientifically reliable tools in order to meet the broader societal challenge of ensuring equal rights for deaf signers across Europe, as expressed in several international legal initiatives (cf. Resolutions of the European Parliament in 1988 and 1998, Motion of the Council of Europe for the protection of sign languages 2001, UN Convention on the Rights of Persons with Disabilities 2006).”

At the end of the Action, we did create what we think is a scientifically reliable tool for writing grammars of sign languages. It is offered as a contribution to all those interested in setting out to accomplish this task. We hope that even when a grammar writer disagrees with some of our choices, this will be because the approach that we have adopted has advanced the discussion on how to study, describe, and ultimately reinforce the status of sign languages.

# Notational conventions

Following common conventions, sign language examples are glossed in English SMALL CAPS. Glosses that appeared in a different language in the source reference have been translated to English. Moreover, the following notational conventions are used:

${}_1\text{SIGN}_3$	Subscript numbers indicate points in the signing space used in verbal agreement and pronominalization. We use subscript '1' for a sign directed towards the body of the signer, '2' for a sign directed towards the addressee, and '3' for all other loci (can be subdivided into '3a', '3b', etc.).
$\text{INDEX}_3 / \text{IX}_3$	A pointing sign towards a locus in space; subscripts are used as explained above.
$\text{SIGN}++$	indicates reduplication of a sign to express grammatical features such as plural or aspect.
$\text{SIGN}^\wedge\text{SIGN}$	indicates the combination of two signs, be it the combination of two independent signs by compounding or a sign plus affix combination.
$\text{SIGN-SIGN}$	indicates that two words are needed to gloss a single sign.
$\text{S-I-G-N}$	represents a fingerspelled sign.

Lines above the glosses indicate the scope (i.e. onset and offset) of a particular non-manual marker, be it a lexical, a morphological, or a syntactic marker. Some of the abbreviations refer to the form of a non-manual marker while others refer to the function:

<u>    </u> /xxx/	lexical marker: a mouth gesture or mouthing (silent articulation of a spoken word) associated with a sign; whenever possible, the phonetic form is given;
<u>    </u> top	syntactic topic marker: raised eyebrows, head tilted slightly back;
<u>    </u> wh	syntactic wh-question marker, often lowered eyebrows;
<u>    </u> y/n	syntactic yes/no-question marker: raised eyebrows, forward head tilt;
<u>    </u> neg	syntactic negation marker: side-to-side headshake;
<u>    </u> re	raised eyebrows (e.g. topic, yes/no-question);
<u>    </u> hs	headshake;
<u>    </u> cd	chin down;
<u>    </u> wr	wrinkled nose;
<u>    </u> r	relative clause;
<u>    </u> cond	conditional;
<u>    </u> bf	body lean forward.

## Sign language acronyms

Throughout the Manual, the following abbreviations for sign languages are used (some of which are acronyms based on the name of the sign language used in the respective countries):

ABSL	Al Sayyid Bedouin Sign Language
AdaSL	Adamorobe Sign Language (Ghana)
ASL	American Sign Language
Auslan	Australian Sign Language
BSL	British Sign Language
CSL	Chinese Sign Language
DGS	German Sign Language ( <i>Deutsche Gebärdensprache</i> )
DSGS	Swiss-German Sign Language ( <i>Deutsch-Schweizerische Gebärdensprache</i> )
DTS	Danish Sign Language ( <i>Dansk Tegnsprog</i> )
FinSL	Finnish Sign Language
GSL	Greek Sign Language
HKSL	Hong Kong Sign Language
HZJ	Croatian Sign Language ( <i>Hrvatski Znakovni Jezik</i> )
IPSL	Indopakistani Sign Language
Inuit SL	Inuit Sign Language (Canada)
Irish SL	Irish Sign Language
Israeli SL	Israeli Sign Language
ÍTM	Icelandic Sign Language ( <i>Íslenskt táknmál</i> )
KK	Sign Language of Desa Kolok, Bali ( <i>Kata Kolok</i> )
KSL	Korean Sign Language
LIS	Italian Sign Language ( <i>Lingua dei Segni Italiana</i> )
LIU	Jordanian Sign Language ( <i>Lughat il-Ishaara il-Urdunia</i> )
LSA	Argentine Sign Language ( <i>Lengua de Señas Argentina</i> )
Libras	Brazilian Sign Language ( <i>Língua de Sinais Brasileira</i> )
LSC	Catalan Sign Language ( <i>Llengua de Signes Catalana</i> )
LSCol	Colombian Sign Language ( <i>Lengua de Señas Colombiana</i> )
LSE	Spanish Sign Language ( <i>Lengua de Signos Española</i> )
LSF	French Sign Language ( <i>Langue des Signes Française</i> )
LSQ	Quebec Sign Language ( <i>Langue des Signes Québécoise</i> )
NGT	Sign Language of the Netherlands ( <i>Nederlandse Gebarentaal</i> )
NicSL	Nicaraguan Sign Language
NS	Japanese Sign Language ( <i>Nihon Syuwa</i> )
NSL	Norwegian Sign Language
NZSL	New Zealand Sign Language



ÖGS	Austrian Sign Language ( <i>Österreichische Gebärdensprache</i> )
RSL	Russian Sign Language
SSL	Swedish Sign Language
TİD	Turkish Sign Language ( <i>Türk İşaret Dili</i> )
TSL	Taiwan Sign Language
USL	Uganda Sign Language
VGT	Flemish Sign Language ( <i>Vlaamse Gebarentaal</i> )
YSL	Yolngu Sign Language (Northern Australia)

# Structure of the SignGram COST Action IS1006

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Working Group 2: Syntax  
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### **3.4. Relative clauses**



### 3.4.0. Definitions and challenges

#### 3.4.0.1. A definition of relative clauses

A relative clause is a clause that modifies a noun, and thus, it has an adjectival function. The noun that is modified is called “the head” (or “head noun”). Depending on the language, any constituent of the relative clause can be relativized, i.e. can be the head. In the following example, the object of the verb of the relative clause, *admire*, is relativized. The blank line in the example indicates where the head, *artist*, is interpreted. The noun phrase containing the relative clause can have any grammatical function. In this example, it is the subject of the main clause. (For reasons of simplification, in the examples provided in this chapter, the relative clause is in italics and, where marked, the head is in bold. Where present, the underscore illustrates the clausal gap where the head is interpreted but not pronounced.)

[The **artist** *that Laura admires* \_ ] makes beautiful pottery.

Languages form relative clauses in a variety of ways. If the sign language that is studied does not mark a relative clause with a special manual sign, identifying relative clauses may be a challenging task. It has been observed in sign languages for which a description of relative clauses is available, that non-manual markers are often the only linguistic means distinguishing relative clause constructions from coordinate clauses / coordinate clauses [Syntax – Section 3.1].

#### 3.4.0.2. Properties of relativization

In what follows, we illustrate some properties of relativization that may help in identifying the presence of a relative clause in the language under investigation.

##### 3.4.0.2.1. Non-manual markers

As already mentioned, non-manuals are often the only device by which a relative construction is distinguished from a coordination of two clauses. The following examples illustrate a minimal pair, namely two clauses differing only in the presence of relative non-manual markers responsible for the different syntactic nature of the two sentences: a juxtaposition of two clauses in (a) and a relative construction in (b) (rel = relative clause non-manual marker(s)).

- a. RECENTLY DOG CHASE CAT COME HOME  
‘The dog recently chased the cat and came home.’ (ASL, Liddell 1978:71)

- \_\_\_\_\_ rel
- b. RECENTLY DOG CHASE CAT COME HOME  
 ‘The dog that recently chased the cat came home.’ (ASL, Liddell 1978:66)

In addition, there may be **special non-manual marking** [Syntax – Section 3.4.5] accompanying relative clauses, in particular in the absence of a manual sign of relativization.

### 3.4.0.2.2. Impossibility of production in isolation

While in a **coordinate construction** / **coordinate construction** [Syntax – Section 3.1], as in (a), both conjuncts can be uttered in isolation, as in (b) and (c), in a relative construction, as the one in (d), the relative clause cannot be uttered in isolation, as shown in (e), as opposed to the main clause that can appear in isolation, as in (f). All examples are from LIS.

- a. CHILD<sub>j</sub> TOY BREAK MOTHER<sub>i</sub> ; SCOLD<sub>j</sub>  
 ‘The child breaks the toy and (his) mother scolds (him).’
- b. CHILD TOY BREAK  
 ‘The child breaks the toy.’
- c. MOTHER<sub>i</sub> ; SCOLD<sub>j</sub>  
 ‘The mother scolds him.’
- \_\_\_\_\_ rel
- d. CHILD TOY BREAK PE MOTHER SCOLD  
 ‘The mother scolds the child that broke the toy.’
- \_\_\_\_\_ rel
- e. \*CHILD TOY BREAK PE
- f. MOTHER<sub>i</sub> ; SCOLD<sub>j</sub>  
 ‘The mother scolds (him).’ (LIS)

### 3.4.0.2.3. Position of temporal adverbials

While temporal **adverbials** [Syntax – Section 6.4.2.1] introducing a coordinate structure modify the predicate of both conjuncts (a), temporal adverbials preceding the head of an internally headed relative clause only modify the relative clause predicate but not the main clause (b).

- a. YESTERDAY DOG CAT CHASE HOME COME  
 ‘Yesterday the dog chased the cat and came home.’ (LIS)
- \_\_\_\_\_ rel

- b. YESTERDAY IX<sub>a</sub> FEMALE CYCLE IX<sub>1</sub> LETTER SEND<sub>a</sub>

‘I sent a letter to that lady who cycled yesterday.’

(HKSL, Tang & Lau 2012: 360)

In **externally headed relative clauses** [Syntax: Section 3.4.0.3], however, the time adverbial preceding the head, being external to the relative clause, can refer and modify the main clause but not the relative clause (in square brackets), as illustrated in the DGS example below. The grammar writer may therefore also use this diagnostic to verify the presence of externally or internally headed relative clause in the target sign language.

\_\_\_\_\_rel  
 YESTERDAY MAN IX<sub>3</sub> [RPRO-H<sub>3</sub> CAT STROKE] ARRIVE  
 ‘The man who is stroking the cat arrived yesterday.’

(DGS, adapted from Pfau & Steinbach 2005: 513)

### 3.4.0.3. Syntactic types of relative clauses: diagnostics

The position of the head noun in noun phrases containing a relative clause differs across languages. In this respect, four types of relative clauses have to be distinguished: (i) externally headed, (ii), internally headed, (iii) **correlative clauses** [Syntax – Section 3.4.6.3], and (iv) **free relatives** [Syntax – Section 3.4.6.4].

In externally headed relative clauses, the head noun appears outside the relative clause, but is interpreted as one of its constituents. The example below illustrates this type.

The **artist** *that Laura admires* \_\_\_ makes beautiful pottery.

The head noun *artist* is external to the relative clause. We can assume that the relative clause contains a gap (represented by the blank line) where the head noun *artist* is interpreted.

In internally headed relative clauses, the head noun is in the position in which it is interpreted, i.e. inside the relative clause. The sentence below exemplifies this type of relative clause. Clearly, the head noun *keeki-o* is internal to the relative clause (in italics).

Yoko-wa Taro-ga sara-no ue-ni *keeki-o* oita-no-o tabeta  
 Yoko-TOP Taro-NOM plate-GEN on-LOC cake-ACC put-NM-ACC ate  
 ‘Yoko ate a piece of cake which Taro put on a plate.’

(Japanese, adapted from Shimoyama 1999: 147)

In correlative clauses, the relativized noun has two copies: one in the position where it is interpreted inside the relative clause, and one in the main clause. The following example illustrates this type. There are two copies of the noun *laRkii* ‘girl’.

*jo laRkii khaRii hai vo laRkii lambii hai*  
 REL girl standing is DEM girl tall is  
 Lit. ‘Which girl standing is that tall is’  
 ‘The girl who is standing is tall.’ (Hindi, Dayal 1991: 647)

Finally, in free relatives, there is no overt head noun that is modified, as illustrated below.

I liked \_\_ *what he cooked* \_\_

While the examples provided here all belong to spoken languages, sign languages are known to display the same typological variation in the syntax of relative clauses. The grammar writer should be also aware that some sign languages are reported to display more types.

Below we list some useful diagnostic tests that can be used to identify the syntactic type of the relative clause under investigation.

(i) *Signs marking the clause boundary*

One way to verify whether a sign (in our case the head or the relativization sign) belongs to a clause is by establishing the clause boundary. Every sign language has specific signs that invariably mark the sentence-initial position. In LIS, for example, such signs are time adverbials. By eliciting a relative clause with a time adverbial modifying the relative predicate and marking the relative clause left periphery, we can verify whether the head is internal or external to it. If it is external, the head precedes the time adverbial, if it is internal, the head follows it. As illustrated in the LIS example below, the head (MAN) follows the time adverbial (TODAY) referring to the relative clause predicate (BRING), thus showing that the head is internal to the relative clause.

\_\_\_\_\_ rel  
 TODAY MAN PIE BRING PE YESTERDAY (IX-3) DANCE  
 ‘The man who today brought the pie danced yesterday.’  
 (LIS, Branchini 2007: 150)

The example also shows that the relativization sign PE belongs to the sentence-initial relative clause since it precedes the time adverbial (YESTERDAY) that modifies the matrix predicate (DANCE), thus, marking the main clause sentence-initial boundary.

(ii) *Non-manual markers*

Since non-manuals mark the relative clause, their spreading domain helps the grammar writer in identifying the structure of the material inside the relative clause. If the NMM spread over the head, this suggests that the head is internal to the relative clause; on the other hand, if the head is not marked by the relative clause NMM, the head is external to the relative clause. In example (a), the NMM only spread over the relative pronoun RPRO-NH<sub>3</sub> but not over the head, suggesting that we are dealing with an externally headed relative clause. In contrast, in (b), the NMM also spread over the head of the relative clause TEACHER, suggesting it is an internally headed relative clause.

- \_\_\_\_\_ re
- a. BOOK [RPRO-NH<sub>3</sub> POSS<sub>1</sub> FATHER READ]  
 ‘the book which my father is reading’ (DGS, Pfau & Steinbach 2005: 512)
- \_\_\_\_\_ rel
- b. [TEACHER MY SON HELP+++] IX<sub>1</sub> PLANT GIVE  
 ‘I gave a plant to the teacher who has helped my son a lot.’  
 (LSC, Mosella 2012: 198)

Research on NMM has shown that eye blinking and pauses in the signing stream mark syntactic boundaries between two clauses. Analysis of these NMM can therefore be also useful in establishing the relative clause and the main clause boundaries.

(iii) *Repetition of the head in both clauses*

A test to verify the presence of correlatives is the possibility for the head to be produced in both clauses. In the following ASL example, the head BOOK is produced in both the relative clause and the main clause, and for this property it is claimed to be a correlative clause.

- \_\_\_\_\_ br \_\_\_\_\_ wr
- [PT GIRL BORROW BOOK] [THAT BOOK GONE]  
 ‘The book the girl borrowed is missing.’ (ASL, Galloway 2012)

It is, however, important to keep in mind that correlative clauses generally allow three possibilities: the head is produced only in the relative clause, only in the main clause, or in both clauses.

(iv) *Lack of a head*

If no head is produced in either clause but the relevant NMM are produced over one of the two clauses, it is likely that the relative clause is a free relative clause. Similar to spoken languages, free relative clauses in sign languages may display the presence of a wh-element, as shown in the LIS example below.

\_\_\_\_\_ rel  
EXAM DONE WHO EXIT CAN  
'Who has taken the exam can go out.'

(LIS, Branchini 2007: 207)

(v) *Presence of ordinals*

**Ordinals** / **ordinals** [Lexicon – Section 3.10.1.2] only modify externally and internally headed relative clauses, not correlatives. They can therefore be used as diagnostics to verify the presence of correlatives. In the LIS example below, the ordinal **FIRST** modifies the head **WOMAN** but also the whole NP containing the relative clause [**WOMAN** <sub>i</sub> **KISS** **PE**] thus showing that it cannot be a correlative clause.

\_\_\_\_\_ rel  
FIRST WOMAN<sub>i</sub> <sub>i</sub> KISS PE<sub>i</sub> NOW BANK WORK  
'The first woman I kissed now works in a bank.'

(LIS, Branchini 2007: 154)

#### 3.4.0.4 Semantic types of relative clauses (restrictive vs. non-restrictive): diagnostics

Relative clauses are also classified as restrictive and non-restrictive. Restrictive relative clauses limit the set of possible objects the noun specified by the clause can refer to, whereas non-restrictive clauses simply provide further information about the modified noun. (a) below is an example of a restrictive clause (marked by the absence of commas in English) since it identifies one student among many, and expresses that only the one that read the manual carried out the experiment. (b), on the other hand, exemplifies a non-restrictive clause (marked by commas in English) since the relative clause does not uniquely identify the student as the one who reads the manual. It just provides further information about the student.

- a. The **student** *who read the manual* carried out the experiment. (restrictive)
- b. The **student**, *who read the manual*, carried out the experiment. (non-restrictive)

(c) and (d) below provide further examples:

- c. My **cousin** *who lives in Spain* is visiting me now. (restrictive)
- d. My **cousin**, *who lives in Spain*, speaks Spanish fluently. (non-restrictive)

(c) implies that I have more than one cousin, and the relative clause 'who lives in Spain' uniquely identifies the cousin that the speaker is talking about. The person uttering (d),

on the other hand, may have only one cousin. Thus, the relative clause does not identify a cousin among a number, but simply provides further information about him.

A set of diagnostics is commonly associated with restrictivity and can be used to verify the interpretation of relative clauses. Each property is first illustrated with an English example and with an example from LIS (see Branchini 2007; Branchini & Donati 2009). Note that in some of the following sign language examples, the non-manual markers are neglected.

(i) *Possibility of a pronominal head*

While the head of a non-restrictive relative clause can be a pronoun (a), the head of a restrictive relative clause cannot (b).

- a. We, who are women, think that you, who are men, should go now.
- b. \*We who are women think that you who are men should go now.
- c. \*YESTERDAY IX-2 FELL-OFF BIKE PE TODAY NEW GLASSES BUY WANT  
\*‘You that yesterday fell off the bike today want to buy new glasses.’ (LIS)

(ii) *Possibility of a proper name head*

While the head of a non-restrictive relative clause can be a **proper noun** / **proper noun** [Lexicon – Section 3.1.2] (a), the head of a restrictive relative clause cannot (b).

- a. John, whom you saw yesterday, is a good friend.
- b. \*John whom you saw yesterday is a good friend.
- c. \*MARIA CAKE COOK LIKE PE PREPARE DONE  
\*‘Maria who likes to cook cakes has prepared a pie.’ (LIS)

(iii) *Possibility of a quantified head*

While a **quantified** head can be the head of a restrictive relative clause (a), it is incompatible with a non-restrictive relative clause (b) (Ross 1967).

- a. Every student who attended my course will be rewarded.
- b. \*Every student, who attended my course, will be rewarded.

No example from a sign language is available to illustrate this at the moment.

(iv) *Possibility of an ordinal head*

An **ordinal** preceding the head of a restrictive relative clause modifies the head and the whole relative clause (a), while an ordinal preceding the head of a non-restrictive relative clause only modifies the head of the relative clause (b).

- a. The first woman that I kissed works in a bank.
- b. The first woman, that I kissed, works in a bank.
- c.  $\frac{\text{rel}}{\text{FIRST WOMAN KISS PE NOW BANK WORK}}$   
'The first woman I kissed now works in a bank.' (LIS)

In the LIS example above in (c), the ordinal **FIRST** modifies the entire relative clause, that is, **FIRST** does not refer to the first woman standing in a row or to the first woman who ever existed, but to *the woman I kissed*, as the translation makes clear. Thus, the relative clause here is interpreted as restrictive.

(v) *Scope of matrix negation*

A **negative element** [Syntax – Section 1.5] [Semantics – Section 12.2] modifying the matrix predicate modifies both the head and the restrictive relative clause (a), but it only modifies the head of a non-restrictive relative clause (b), not the non-restrictive relative clause (Demirdache 1991).

- a. I haven't met a girl who doesn't like to wear make-up.
- b. \*I haven't met a girl, who doesn't like to wear make-up.
- c.  $\frac{\text{rel}}{\text{ONE WOMAN MAKE-UP NOT PE IX-1 MEET NEVER}}$   
'I never met a woman who doesn't wear make-up.' (LIS)

In the LIS example above in (c), the matrix negation (**NEVER**) modifies the head and its relative clause 'a woman who doesn't wear make-up'. Thus, the relative clause here is interpreted as restrictive.

(vi) *Intensional verbs*

While restrictive relative clauses are modified by intensional verbs (b), like *think*, in non-restrictive relative clauses, intensional verbs only refer to the head, not to the non-restrictive relative clause (a) (Zhang 2001).

- a. #Gianni thinks that Mary likes men, who own big cars.
  - b. Gianni thinks that Mary likes men who own big cars.
- rel



- c. GIANNI THINK MEN CAR CL-BIG-CAR PE MARIA LIKE  
 ‘Gianni thinks that Maria likes men who own big cars.’ (LIS)

In the LIS example in (c), the intensional verb *think* refers to the whole relative clause *men who own big cars*. Thus, the relative clause here is interpreted as restrictive.

(vii) *Interpretation of ellipsis*

In **ellipsis** / **ellipsis** [Syntax – Section 2.0.6] [Syntax – Section 2.5] constructions a constituent of a sentence is not pronounced but it is interpreted as identical to a constituent in another part of the sentence. In (a) below, for instance, the second clause does not have a lexical verb and an object, but ‘my brother does not’ is interpreted as ‘my brother does not like the cake’.

The possible interpretations of ellided predicates correlate with restrictive and non-restrictive interpretations of the relative clauses in the sentence. While the head of a predicate ellipsis may include a non-restrictive relative clause (a), it may not include a restrictive relative clause (b).

- a. My sister likes the cake I bake, and my brother does not  
 (= like the cake I bake)
- b. My sister likes the cake, which by the way I cook well, and my brother does not (= like the cake)  
 \_\_\_\_\_rel
- c. CAKE IX-1 COOK PE SISTER POSS-I LIKE BROTHER NOT  
 ‘My sister likes the cake that I bake, my brother does not.’ (LIS)

In the English example in (a), the ellided constituent is interpreted as ‘like the cake’ while in (b) and in the LIS example (c), it is interpreted as ‘like the cake that I bake’, thus, including the restrictive clause.

(viii) *Modification by sentence adverbs*

While **sentence adverbs** [Syntax – Section 6.4.1] [Lexicon – Section 3.5.2] of modification, like *by the way* in the examples below, can appear inside non-restrictive relative clauses, they cannot appear inside restrictive relative clauses (Ogle 1974).

- a. The boys, who by the way have lost the case, should give up.  
 b. \*The boys who by the way have lost the case should give up.  
 c. \*WOMAN MAN BY-THE-WAY KISS PE PASTA MAKE  
 \*‘The woman that by the way kissed the man can make pasta.’ (LIS)

The ungrammaticality of the LIS example in (c) shows that the relative clause here is interpreted as restrictive.

(ix) *Category restrictions of the head*

While the head of a non-restrictive relative clause can belong to any syntactic category (an adjective, a preposition, etc.), the head of a restrictive relative clause can only be a noun (Sells 1985).

- a. My sister is intelligent, which my brother never is.
- b. \*My sister is intelligent which my brother never is.
- c. \*SISTER POSS-1 INTELLIGENT PE BROTHER POSS-1 NEVER  
\*‘My sister is intelligent which my brother never is.’ (LIS)

The ungrammaticality of the LIS example in (c) shows that the relative clause here is interpreted as restrictive.

The following table summarizes for each property the behavior displayed by restrictive and non-restrictive relatives in English.

Property	Restrictive	Non-restrictive
1. Pronominal head	No	Yes
2. Proper name head	No	Yes
3. Quantified head	Yes	No
4. Ordinal head	Yes	No
5. Matrix negation	Yes	No
6. Intentional Verbs	Yes	No
7. Ellipsis	Yes	No
8. Sentential adverbs	No	Yes
9. Any category	No	Yes

Analyses of relative clauses in the sign languages studied so far have shown that the semantic differences between restrictive and non-restrictive relative clauses can result in syntactic differences. While restrictive relative clauses may be marked by relativization signs and specific non-manual markers, non-restrictive relative clauses may lack the presence of relativization signs and of non-manuals marking relative clauses. Non-restrictive relative clauses rather look like conjoined clauses or parentheticals, whose boundary is sometimes marked by an eye blink, a non-manual marker often used to mark clause boundaries.

### 3.4.1. Type of relative clause

The first thing to do while describing relativization in a given language is identifying the type of strategy that is used in the language under investigation. The grammar writer is advised to use the **diagnostics listed above** [Syntax-Section 3.4.0.3], and to keep in mind that some (sign) languages are reported to display more than one type.

### 3.4.2. Presence or absence of a relativization sign

Spoken languages differ in the way they mark relative clauses. They may employ: (a) a **complementizer**, (b) a relative (or personal) pronoun, (c) a determiner, (d) a participial form, or (e) nothing. The elements that mark the relative clause are underlined in the following examples, while the modified noun is in bold.

- a. The **book** that *I read* is interesting.
- b. The **woman** who *leaves next door* is a singer.
- c. *Peemε* **thep** *khii-pa* the *nee yin.*  
Peem.ERG book.ABS carry-PART the.ABS I.GEN.be  
'The book that Peem carried is mine.' (Tibetan, Keenan 1985:161)
- d. *Kitap oku-yan* **çocuk**  
book read-SUBJ.REL.PART child  
'The child who is reading /reads /read books.' (Turkish)
- e. *The writer I met* is selling his house.

Sign languages show the same variation in expressing the equivalent of relative clauses. There are sign languages that do not employ any relativization sign marking the relative clause, as illustrated by the following LSB example.

**GIRL FALL BICYCLE STAY HOSPITAL**  
'The girl that fell off the bicycle is in the hospital.'  
(LSB, reported in Pfau & Steinbach 2005: 511)

In analyzing relative clauses in the target sign language, the grammar writer should verify the presence of manual signs of relativization marking the relative clause and/or its head, their specificity for human/non-human referents and for singular/plural heads, their position(s), and their optionality/obligatoriness in the construction.

#### 3.4.2.1. List of relativization signs

In the sign languages that display relativization signs, signs come in different forms. Sign languages displaying **internally headed relative clauses** [Syntax- Section 3.4.0.3], like e.g. ASL, may employ a determiner-like sign spatially agreeing with the relative clause head (in the example below, the determiner-like sign is glossed as THAT).

\_\_\_\_\_ r

RECENTLY **DOG** THAT CHASE CAT COME HOME

‘The dog which recently chased the cat came home.’ (ASL, Liddell 1978: 66)

Others markers may be specified for humanness or number.

#### 3.4.2.1.1. Human/non-human specificity of the relativization sign

DGS exhibits **externally headed relative clauses** [Syntax- Section 3.4.0.3 and uses a manual sign equivalent to a relative pronoun marking the relative clause as subordinate. DGS has two different relative pronouns: one for human referents (RPRO-H: an upright B-hand resembling a person classifier) and one for non-human referents (RPRO-NH: a pointing sign) – in the examples below, both are accompanied by a non-manual marker (‘re’ = raised eyebrows).

a. \_\_\_\_\_ re  
 MAN RPRO-H CAT STROKE  
 ‘the man who is stroking the cat’

b. \_\_\_\_\_ re  
 BOOK RPRO-NH POSS<sub>1</sub> FATHER READ  
 ‘the book which my father is reading’

(DGS, adapted from Pfau & Steinbach 2005: 512)

#### 3.4.2.1.2. Singular/plural specificity of the relativization sign

A language may have relativization signs marked for the number feature (singular/plural) of the head noun.

#### 3.4.2.2. Position of the relativization sign

The position of manual signs of relativization may vary: they may be realized next to the head (as in the ASL example above) or at the relative clause periphery (as is true for the marker PE in the LIS example below), and their presence may be optional or obligatory.

\_\_\_\_\_ rel

TODAY *MAN<sub>i</sub> PIE BRING PE* YESTERDAY (IX<sub>i</sub>) DANCE  
 ‘The man who today brought the pie danced yesterday.’  
 (LIS, Branchini 2007: 150)

### 3.4.2.3. Optionality or obligatoriness of the relativization sign

The grammar writer should check whether the relativization sign is optional or obligatory.

### 3.4.3. Position of the noun phrase with the relative clause within the matrix clause

In spoken languages, the position of the relative clause with respect to the main clause is often tightly connected to the word order of the language and to the syntactic role carried out by the noun phrase with respect to the matrix predicate.

In the English example in (a), an SVO language, the relative clause modifies the object of the main clause, thus the NP modified by the relative clause occupies a post-verbal position, the position of objects in English. In the Japanese example in (b), the relative clause, again, modifies the object of the main clause but since Japanese is an SOV language, the object NP appears between the subject and the matrix predicate.

- a. I saw [the **house** *that they want to buy.*]
- b. Taro-ga [*ringo-ga kittin-ni aru no-o*] tot-te tabeta  
 Taro-NOM apple-NOM kitchen-in be no-ACC pick.up ate  
 ‘Taro picked up and ate the apple that was in the kitchen.’  
 (Japanese, Nishigauchi 2003: 1)

Relative clauses in the sign languages for which a description is available, behave differently as to the sentential position of the noun phrase containing a relative clause.

In LIS, NPs with relative clauses occupy a sentence-initial position regardless of their syntactic role in the **matrix clause** (c), while in DGS, the position of the NP with a relative clause corresponds to the position of the NP alone. Thus, DGS patterns with languages like English (d).

- c. \_\_\_\_\_ rel  
 [*DOG<sub>i</sub> IX<sub>i</sub> EAT A-LOT PE<sub>i</sub>*] DOCTOR (IX<sub>i</sub>) VET BRING  
 ‘I took to the vet the dog that eats a lot.’ (LIS, Branchini 2007: 150)
- d. INDEX<sub>1</sub> **BOOK** *RPRO-NH<sub>3</sub> TABLE LIE-ON* KNOW  
 ‘I know the book which is lying on the table.’

Summing up, the position of the relative clause with respect to the main clause should be verified. Three possibilities may occur: NPs with relative clauses (i) always appear in a (dislocated) sentence-initial/final position regardless of their syntactic role; (ii) stay in-situ; (iii) may be optionally produced inside the matrix clause or dislocated to the sentence periphery.

#### 3.4.4. Subject vs. object relativization

Some languages mark relative clauses in a specific way depending on whether the relativized noun is the subject or object (or another main constituent) of the predicate of the relative clause. In English, for instance, if the head is human and the object of the predicate, it may be optionally marked with the relative pronoun *whom*, as opposed to *who*, which would be used if the head noun was the subject of the predicate. In (a) *a man* is the subject of *climbed*, whereas in (b) *the man* is the object of *to date*.

I once met [a **man** *who had climbed Mt. Everest*].

I met [the **man** *whom my sister used to date*].

There are also some languages that mark this difference with different inflectional markers on the predicate of the relative clause. The following examples are from Turkish:

- a. Ara-yan            kadın  
call-SUBJ.REL    woman  
'The woman who called.' (Turkish)
- b. Ara-dığ-ım        kadın  
call-OBJ.REL-1POSS    woman  
'the woman whom I called' (Turkish)

In (a), the head noun *kadın* 'woman' is the subject of the verb *ara* 'call', and the verb has a marker for subject relativization, *-yan*. In (b), on the other hand, the head noun *kadın* 'woman' is the object of the verb *ara* 'call', and the verb has a marker for object relativization, *-dığ*, followed by the first person possessive marker expressing the person features of the subject of the relative clause.

Thus, the grammar writer should investigate whether the target sign language marks subject and object relativization differently: by different manual signs or non-manual markers.

### 3.4.5. Displacement of noun phrases with relative clauses

Relative clause are reported to be frequently displaced in sign languages. In the following examples from LIS, an SOV language, although the noun phrase modified by a relative clause (marked by relative clause non-manuals: rel = relative) is the object of the main predicate WASH, it must precede the matrix subject PAOLO, as in (a), and cannot be in its argument position, as in (b). If the NP were not modified by a relative clause, it could occur between the subject and the verb, as in (c).

- a.  $\overline{\text{rel}}$   
YESTERDAY DOG<sub>i</sub> FIND PE<sub>i</sub> PAOLO<sub>j</sub> IX<sub>j</sub> WASH  
'Paolo washed the dog that I found yesterday.' (LIS, Branchini 2007: 151)
- b. \* PAOLO<sub>j</sub> IX<sub>j</sub>  $\overline{\text{rel}}$   
YESTERDAY DOG<sub>i</sub> FIND PE<sub>i</sub> WASH  
Intended: 'Paolo washed the dog that I found yesterday.'
- c. PAOLO<sub>j</sub> DOG WASH

The grammar writer should verify whether relative clauses can be displaced in the language under investigation, and describe the non-manual marker and the positions their displacement is associated to.

### 3.4.6. Special non-manual marking

Where no manual sign of relativization is present, non-manual marking is often the only way to distinguish between a relative clause and a **coordination** / **coordination** [Syntax – Section 3.1] of two clauses. The analysis of potentially specific non-manual markers in relative clauses as well as their obligatoriness or optionality and their spreading domain is, therefore, crucial in describing how relative clauses are expressed in the target sign language. The following non-manuals marking relative clauses have been identified in the sign languages studied up to now: raised eyebrows, squinted eyes, head nodding over the head or over the relativization sign, backward head tilt, tensed upper lip, and tension of the upper cheeks.

Sign languages usually employ a combination of different non-manual markers. The sequence of manual signs a non-manual marker co-occurs with is called the “spreading domain” of the non-manual marker. The spreading domain of a non-manual marker may be the entire **clause** or a smaller **constituent**. In relative clauses, the spreading domain of the different non-manual markers may not overlap: while one may spread over the entire relative clause, another one may spread only over the relativization sign (if present) or over the head, as shown in the examples reported below (r/rel = relativization; nod = head nod; re = raised eyebrows).

\_\_\_\_\_ r nod  
1ASK3 GIVE1 DOG URSULA KICK THAT  
'I asked him to give me the dog that Ursula kicked.' (ASL, Liddell 1978: 85)

\_\_\_\_\_ re  
YESTERDAY MAN (IX3) RPRO-H3 CAT STROKE ARRIVE  
'The man who is stroking the cat arrived yesterday.'  
(DGS, adapted from Pfau & Steinbach 2005: 513)

\_\_\_\_\_ rel  
DOG1 IX1 EAT A-LOT PE1 DOCTOR (IX1) VET BRING  
'I took to the vet the dog that eats a lot.'  
(LIS, Branchini 2007: 150)

### 3.4.6.1. List of non-manual markers

The grammar writer can list the non-manual markers of relative clauses here.

### 3.4.6.2. The spreading domain of each non-manual marker

Here, the grammar writer can describe the spreading domain per non-manual marker of relative clauses listed in the preceding section.

### 3.4.7. Restrictive vs non-restrictive relative clauses

The grammar writer should describe here whether the language distinguishes between restrictive and non restrictive relative clauses, using the definitions and the diagnostics discussed [above](#) [Syntax: Section 3.4.0.4].

## Elicitation materials

Relative clauses are complex sentences not frequently occurring in spontaneous production. It is for this reason that it may be not easy to find them in a corpus containing only free conversational data. An in-depth analysis of the phenomenon trying to verify the syntactic and semantic types available in the literature requires a substantial body of evidence.

If a general description of the phenomenon is already available in the target sign language, the grammar writer may ask for [grammaticality judgments](#) or ask the signer to produce a target sentence by translating it from the spoken language. This has the advantage that the grammar writer can focus on the fine-grained aspects for which a detailed investigation is needed. However, these investigation techniques can have some



drawbacks, one of them being the influence that the spoken language construction may have on the sign language production or the risk that the informant is not competent enough in the spoken language. Another risk concerns the use of non-manual marking. In artificial situations in which the sentence to be judged as grammatical or ungrammatical is later produced by the signer, production of the relevant non-manual marking may be avoided or seriously modified from the otherwise spontaneous production.

For these reasons, it may be useful to use elicitation techniques that lead to the production of relative clauses in a semi-naturalistic setting.

The grammar writer should try to avoid the production of what he believes to be the relevant construction in the target sign language by only facilitating its elicitation.

Starting from early investigations on relative clauses, an elicitation technique successfully employed toward this end is the presentation in the target sign language of a story with limited information about three different characters. The characters are introduced in a generic manner and referred to, for instance, as *one man*, *another man*, and *the next man*, no proper name is provided. The informant is either asked to retell the story or to answer questions regarding the characters. The most convenient way for the informant to refer to the story characters is with a relative clause.

An example of a story used to elicit relative clauses in LIS is provided below.

#### Elicitation context.

I love dogs. In my house I have three dogs.

One dog is ill and tomorrow I will take it to the vet, another dog yesterday chased a cat and today came home. The next dog is very fat and loves to eat bones.

The informant was then asked ‘What dog came home today?’ The most convenient way to answer this question is by using a relative clause ‘The dog that yesterday chased the cat came home today’.

A similar methodology mainly adopted to elicit relative clauses in spoken languages with children makes use of puppets to enact the story presented. After acting out the story with the puppets, the grammar writer may ask the informant which referent he/she would like to be, or which referent does something in the story. The risk when using puppets is that, in answering the question, informants may avoid producing a relative clause by directly pointing to the relevant referent. A similar drawback is found in a variation of the task, in which the informant is presented pictures illustrating a story and asked questions about the story characters. Pictures involve a further risk: they might not adequately represent the story, and they may provide the informant with too much information that could be used to avoid producing relative clauses. A picture representing a man eating an apple, for instance, may lead the informant to answer the question ‘What man would you like to be in this picture?’ by simply saying ‘the tall man’ or ‘the man with the apple’ rather than ‘the man who is eating the apple’.

Something more should be said for the elicitation of free relative clauses, that is, of relative clauses lacking an overt head. If a description of full relative clauses, that is, of relative clauses with an overt head, in the target sign language already exists, the grammar writer may present one such construction to the informant. The grammar writer may then ask the informant to avoid producing the referent head in the aim of referring to a non-specific referent, to a generic one. An example of an elicitation technique of a free relative clause is provided below.

#### Elicitation context.

We are at university. Students are taking a written exam. The professor tells them that they have an hour to complete the exam and says that no one can leave the room before completing the exam. He says ‘the student that finishes the exam can go out’.

The informant is then asked the following questions: ‘What should I say if I wanted to say that anyone, a generic person, once he/she has finished the exam can go out?’ and ‘Can I omit the referent *the student* in my sentence? If yes, what should I say?’

If, however, no description of relative clauses is available in the target sign language, the grammar writer is advised to follow the elicitation techniques illustrated above for eliciting full relative clauses first.

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## **3.5. Adverbial clauses**

### **3.5.0. Definitions and challenges**

#### **3.5.0.1. Adverbial clauses**

An **adverbial clause** is a constituent of a complex **sentence** which is sentential in form but fulfills an adverbial function such as expressing the time, location, manner, purpose, reason, circumstance, concession/contrast, substitution, addition, and condition of the main event (Sæbø 2011). These different adverbial functions are exemplified below, with the adverbial clauses underlined.

If you come home earlier, we can have dinner together.

You were not at home when I called you. (time)

The referee cancelled the game because it started to snow heavily. (reason)

Yesterday John met Mary where he had proposed to her. (location)

You should do it as I told you. (manner)

We stopped driving to work in order to save money. (purpose)

He got into the army by lying about his age. (circumstance)

Although she had not slept much the night before, she continued to work as hard.  
(concession)

You talk to my mother instead of talking to me. (substitution)

Besides waking me up in the middle of the night, he accused me of not caring about his feelings. (addition)

In addition to these, languages may have absolute clauses where the adverbial function or the semantic relationship between the subordinate clause and the main