

*Josep Quer, Carlo Cecchetto, Caterina Donati, Carlo Geraci,  
Meltem Keleşir, Roland Pfau, Markus Steinbach (Eds.)*

## 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.

**J. Quer; C. Cecchetto; C. Donati; C. Geraci; M. Keleşir; R. Pfau; M. Steinbach**

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# SignGram Blueprint: Manual

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Edited by

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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

Working Group 1: Socio-historical background, Phonology, Morphology, Lexicon  
Coordinator: Roland Pfau

Working Group 2: Syntax  
Coordinator: Caterina Donati

Working Group 3: Semantics, Pragmatics  
Coordinator: Markus Steinbach

Coordination of Blueprint visuals: Brendan Costello, Rannveig Sverrisdóttir

Steering committee: Carlo Cecchetto, Caterina Donati, Carlo Geraci, Meltem Kelepir, Roland Pfau, Josep Quer, and Markus Steinbach

# List of contributors

**Klimis Antzakas**

Keddy A', Athens  
Greece

**Valentina Aristodemo**

CNRS, Institut Jean-Nicod  
Paris  
France

**Cristina Banfi**

Universidad de Buenos Aires  
Buenos Aires  
Argentina

**Gemma Barberà**

Universitat Pompeu Fabra  
Barcelona  
Spain

**Chiara Branchini**

Università Ca' Foscari  
Venice  
Italy

**Anna Cardinaletti**

Università Ca' Foscari  
Venice  
Italy

**Carlo Cecchetto**

Università degli Studi di Milano  
Bicocca, Milan  
Italy and  
Unité Mixte de Recherche CNRS  
Paris 8  
France

**Kearsy Cormier**

DCAL, University College London  
London  
United Kingdom

**Brendan Costello**

BCBL, University of the Basque Country  
San Sebastian  
Spain

**Onno Crasborn**

Radboud Universiteit  
Nijmegen  
The Netherlands

**Athanasia-Lida Dimou**

ILSP/ATHENA RC  
Athens  
Greece

**Caterina Donati**

Université Paris Diderot  
Paris 7  
Paris  
France

**Stavroula-Evita Fotinea**

ILSP/ATHENA RC  
Athens  
Greece

**Carlo Geraci**

CNRS, Institut Jean Nicod  
Paris  
France

**Aslı Göksel**

Boğaziçi Üniversitesi  
Istanbul  
Turkey

**Annika Herrmann**

Institute for German Sign Language and  
Communication of the Deaf  
University of Hamburg  
Hamburg  
Germany

**Jóhannes Jónsson**

University of Iceland  
Reykjavik  
Iceland

**Meltem Keleşir**

Boğaziçi Üniversitesi  
Istanbul  
Turkey

**Vadim Kimmelman**

Universiteit van Amsterdam  
Amsterdam  
The Netherlands

**Jette H. Kristoffersen**

University College Capital  
Denmark

**Andrea Lackner**

ZGH, Alpen  
Adria Universität Klagenfurt  
Austria

**Lara Mantovan**

Università Ca' Foscari  
Venice  
Italy

**A. Sumru Özsoy**

Boğaziçi Üniversitesi  
Istanbul  
Turkey

**Francesca Panzeri**

Università degli Studi di Milano-Bicocca  
Bicocca, Milan  
Italy

**Roland Pfau**

Universiteit van Amsterdam  
Amsterdam  
The Netherlands

**Josep Quer**

ICREA – Universitat Pompeu Fabra  
Barcelona  
Spain

**Galini Sapountzaki**

University of Thessaly  
Volos  
Greece

**Philippe Schlenker**

Institut Jean Nicod  
École Normale Supérieure  
Paris  
France

**Odd-Inge Schröder**

Oslo University College  
Oslo  
Norway

**Markus Steinbach**

Georg-August-Universität-Göttingen  
Göttingen  
Germany

**Rannveig Sverrisdóttir**

University of Iceland  
Reykjavik  
Iceland

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## 3.2. Subordination: distinctive properties

### 3.2.0. Definitions and challenges

#### 3.2.0.1. A definition of subordination

By subordination, we mean a syntactic mechanism by which clauses are combined. As opposed to **coordination** / **coordination** [Syntax – Section 3.1], where clauses share an equal status in the sentence, a core property of subordination is the asymmetric status of the two (or more) clauses being in a hierarchical relation.

The main clause, also called the **independent clause**, is syntactically and semantically autonomous, while the subordinate clause, also called **dependent**, is syntactically and semantically dependent on the main clause. In this section, we will use the term “**main clause**” to refer to the independent clause and the term “**subordinate clause**” to refer to the dependent clause.

In this section, the grammar writer will be guided into the observation of a number of properties that can be associated with subordination, and is advised to use them to introduce subordinate clauses and distinguish them from coordinate clauses. Languages however vary a lot with respect to the properties that can define subordinate clauses. The grammar writer is, therefore, advised to verify their validity in the target sign language. The grammar writer is then referred to various sections in the Syntax part, namely the sections on **argument clauses** [Syntax – Section 3.3], **relative clauses** [Syntax – Section 3.4], **adverbial clauses** [Syntax – Section 3.5], **comparative clauses** [Syntax – Section 3.6], and **comparative correlatives** [Syntax – Section 3.7], where specific subordinate constructions are discussed, and for a detailed and specific description of the manual and non-manual markers of subordination that may be employed in each construction.

#### 3.2.0.2. Different types of subordination

Subordinate clauses can be classified roughly as follows: **argument clauses** [Syntax – Section 3.3] / **argument clauses** (i.e. clauses functioning as subject or object), **relative clause** [Syntax – Section 3.4] / **relative clauses**, and **adverbial clauses** [Syntax – Section 3.5] / **adverbial clauses**. The example in (a) below illustrates an argument clause, (b) a relative clause, and (c) an adverbial clause.



- a. [**That** the speech was boring] was evident to everybody.
- b. I talked to the woman [**who** was asking for you].
- c. I won't say anything else [**if** you don't stop yelling at me].

Among the subordinated clause types mentioned above, the relative clause is the only one that is embedded in a noun phrase rather than being directly embedded in a larger clause.

As shown in the examples above, spoken languages often mark subordinate clauses through subordinate markers (shown in bold) signaling their dependent status with respect to the main clause. However, this is not always the case. Sometimes, no subordinate marker is available and it may be difficult to establish whether we are dealing with a coordinate or a subordinate structure. The example below exemplifies an English complement clause not introduced by an overt subordinate marker.

I feared [my plane was late].

### 3.2.0.3. Methodological challenges in identifying a subordinate clause

For many sign languages for which a description of subordination is available, it has been reported that there are no or few subordination markers, and non-manual markers are often the only syntactic devices that mark a clause as a subordinate clause and distinguish it from a coordinate clause.

It has, for instance, been observed in many sign languages that **conditional clauses** [Syntax – Section 3.5.1] / **conditional clauses** and **relative clauses** [Syntax – Section 3.4] are commonly marked by non-manual markers only. The following illustrates this with minimal pairs: (a) and (c) are instantiations of coordinate clauses (juxtaposition) while (b) and (d) minimally differ from them in the use of non-manuals (cond = conditional marker; r = relative clause marker), marking the clause over which they spread as subordinate.

- a. ANNA SICK HOME STAY  
‘Anna is sick and she stays home.’ (LIS)  
\_\_\_\_\_ cond
- b. ANNA SICK HOME STAY  
‘If Anna is sick, she will stay home.’ (LIS)
- c. RECENTLY DOG CHASE CAT COME HOME  
‘The dog recently chased the cat and came home.’ (ASL, Liddell 1978: 71)  
\_\_\_\_\_ r
- d. RECENTLY DOG CHASE CAT COME HOME  
‘The dog that recently chased the cat came home.’ (ASL, Liddell 1978: 66)

Similarly, in many sign languages, **object clauses** [Syntax – Section 3.3.2] are not marked, unless associated with special non-manual markers expressing topic or *similia*. The following provides an example from LIS in which the non-manual raised eyebrows (‘re’) spreads over the object clause, making it as topicalized.

\_\_\_\_\_ re  
PIERO BIKE FALL GIANNI TELL  
‘Gianni said that Piero fell from the bike.’ (LIS, Cecchetto et al. 2008: 49)

#### 3.2.0.4. Methodological challenges in identifying the (non-)finiteness of a clause

An issue related to subordination is finiteness, that is, to determine whether the subordinated clause is finite or non-finite. Note that determining the (non-)finiteness of the clause under investigation may also help determine whether a clause is subordinated or not. If one finds evidence that the clause displays properties of a non-finite clause, then one can conclude that it has to be subordinated. Of course, this is different for finite clauses: they may or may not be subordinated.

Here we describe the notion “finiteness” and discuss the methodological challenges in identifying clauses as finite or non-finite in spoken and sign languages. Although the distinction between finite and non-finite clauses dates back to traditional grammarians and is amply used, it is not univocally defined.

Morphologically, (non-)finiteness is seen as a property of forms in a verbal paradigm. For example, non-finite forms, which in English comprise participles (*eaten/eating*), gerunds (*eating*), and infinitives (*to eat*), are identified as poorer and more defective than finite forms like indicative and subjunctive, which can be specified for features like **tense** [Morphology – Section 3.2] [Semantics – Chapter 1], **aspect** [Morphology – Section 3.3] [Semantics – Chapter 2], and **person and number agreement** [Morphology – Section 3.1]. However, this morphological criterion can be difficult to apply to languages for which a fully satisfactory morphological description is not available, as is the case with many sign languages.

Another difficulty is that the morphological divide between finite and non-finite forms is not clear, since there are well-known cases of intermediate forms, such as infinitives inflected for person (e.g. Portuguese) or for tense (e.g. Latin). As agreement in sign languages is realized spatially and, given the importance of space in sign language, one can hypothesize that agreement involving space might be realized also in non-finite forms. A final complication is that even in indisputable cases of finite clauses, tense specification in many sign languages is not expressed by tense morphology on the verb. For all these reasons, trying to identify non-finite clauses in sign languages based on a purely morphological criterion is not particularly promising.

Another possible test to set apart finite and non-finite clauses is that finite forms can occur with a fully specified lexical subject (e.g. ‘John resigned’), while non-finite

clauses *typically* cannot occur with a visible subject (e.g. ‘John decided (\*he) to resign’).

However, even this test is not without problems. The first obvious observation is that many sign languages are pro-drop, which implies that all clauses, including finite clauses, can occur with a phonologically **null pronominal expression** [Syntax – Section 2.4.1.1]. Hence, the absence of a lexical **subject** [Syntax – Section 2.2.1] is no indication that the clause is non-finite. Secondly, there are constructions in which a lexical subject can occur in non-finite clauses. One instance are the intermediate cases mentioned above, in which a lexical subject can occur with infinitives inflected only for person or only for tense. Another case are perception verbs which in English and many Romance languages can select a non-finite clause with a lexical subject (e.g. ‘I saw her running away’). Similarly, in English the infinitival complement of verbs like *want* and *expect* may have a lexical subject (e.g. ‘I want/expect her to come’). For all these reasons, the presence/absence of a lexical subject is not a reliable criterion to set finite and non-finite clauses apart, at least if it is taken in isolation.

A final method to set apart finite and non-finite clauses is less dependent on the morpho-syntactic peculiarities of the given language and, as such, it should be more easily applicable cross-linguistically. The criterion is that only a finite verb can appear as the main verb of a full, independent clause. In contrast, non-finite verbs cannot head an independent clause and may occur only in **subordinate clauses**. This happens because a matrix clause locates the event described by the verb as being overlapping, past or future with respect to utterance time, and only finite forms are anchored to the time of utterance by virtue of being fully tensed. A non-finite verb is connected to the utterance time only indirectly by virtue of being dependent on a finite verb. For example, in sentences like ‘John decided to leave’ and ‘John will decide to leave’ (at least in the absence of time adverbials in the embedded clause) the event of leaving is located in the past or in the future not on its own ground but contingent on the form of the *matrix* verb.

Although useful, even this test is not without problems. A caveat is that finite forms can, *but need not*, head a main clause. Of course, finite verbs can occur in subordinate clauses (‘John decided that he will leave’), so the occurrence of a verb in an embedded clause is no guarantee that the verb is non-finite.

For all these reasons, the existing research on non-finite clauses in sign languages is very limited and, in fact, it cannot be excluded that sign languages (or at least some sign languages) do not overtly mark the distinction between finite and non-finite forms. Still, sign languages display **modal verbs** [Syntax – Section 2.3.1.3] [Morphology – Section 3.4] [Semantics – Chapter 4], which cross-linguistically may introduce non-finite clauses. Furthermore, for at least two sign languages (ASL and LIS), it has been explicitly claimed that the distinction between finite and non-finite clauses is real, so the existence of non-finite clauses is a research question that the grammar writer may want to consider.

There are two main types of verbs that are likely to introduce non-finite clauses and the grammar writer may start his/her analysis from them: **control** predicates and **raising** predicates. Among the former type some modal verbs may be listed.

### *Control predicates*

Predicates like *want* are called *subject* control predicates because the controller is the matrix subject (e.g. ‘Mary wants John to leave’), while other predicates, like *ask* are called *object* control predicates because the controller is the indirect object, as in ‘Mary asked John to leave’.

Although some semantic classes of verbs tend to be control predicates cross-linguistically (verbs of order, intention and desire being an example), the set of control predicates must be determined empirically language after language because of lexical idiosyncrasies. The following is a very partial list of control predicates in English, which, due to their semantics, might (but need not) be control predicates in other languages.

Subject control predicates: *want, try, manage, start, hope, fail, plan, wait, desire, choose, decide.*

Object control predicates: *allow, ask, command, convince, demand, persuade, order, permit, make, help, tell.*

Modal verbs like the counterparts of English *want, can* and *must*, at least in some languages and in some uses, may be analyzed as verbs introducing a non-finite clause. The English sentence ‘Mary wants to swim’ is an example. It is called a control structure because the phonologically null subject of the infinitival clause depends on (i.e. “is controlled by”) an argument of the main verb (the subject in this case).

Modal verbs do not always introduce a non-finite clause, though. For example, *can* in the English sentence ‘Mary can swim’ is normally analyzed as a special type of auxiliary, so it would be a mono-clausal sentence.

The grammar writer should be aware of these two general types of possible analyses for modal verbs.

### *Raising predicates*

A second class of verbs that cross-linguistically may take a non-finite clause are verbs like *seem, be likely, appear*, etc. These predicates have different properties from control predicates. A key difference is semantic in nature because raising verbs are one-place predicates, in contrast to control verbs which are two-place predicates. This is shown by the fact that (a) is roughly synonymous with (b), a sentence in which the main subject is the expletive pronoun *it*, a sort of place-holder that does not contribute any meaning to the sentence. On the other hand, (d) is sharply ungrammatical, because the meaningless expletive pronoun does not qualify as the external argument of *want*.

- a. John seems to be the winner.
- b. It seems that John is the winner.
- c. John wants to be the winner.
- d. \*It wants that John is the winner.

Other properties follow from this. For example, the subject of control predicates is typically sentient or volitional, but no such restriction holds for the subject of raising predicates. This property is illustrated by the contrast between (b) and (d) in the examples given below.

- a. The dean decided to reduce the money for our department.
- b. \*The crisis decided to reduce the money for our department.
- c. The dean seems to go against our plans.
- d. The crisis seems to go against our plans.

Another consequence of the fact that the raising predicate is mono-argumental is that it can take an infinitival clause with a meteorological verb, while a control predicate cannot. This is shown by the contrast below.

- a. It seems to be raining right now.
- b. \*It is trying to rain.

Since the differences between raising and control predicates are semantically based, it is possible that they show up in sign languages as well.

A potential confounding factor is that there may be verbs that alternate between a control and a raising construction. These cases are rare but are attested, one example being *begin* in English.

- a. It began to rain.
- b. John began to eat a sandwich.

*Begin* is a raising verb in (a), as witnessed by the fact that it introduces an infinitival clause with a meteorological verb, but it is a control verb in (b) since the matrix subject is volitional.

The work on non-finite clauses in sign languages is extremely limited, and there is no standard way to elicit them. So, it is hard to give well-informed methodological advice to the grammar writer. However, a possible starting point is the following: the grammar writer may initially focus on verbs that, given their semantics, are known to be prototypical examples of control predicates (say, *order* or *decide*). The next step is looking for any property that systematically differentiates the complement clauses of these verbs from clauses that, given their internal structure, are clear cases of finite clauses. If the complement clause of the verb that is a good candidate for being a control

verb is systematically different from “good” cases of finite clauses that clause is a candidate for being a non-finite structure. In fact, the two works that have reported the existence of non-finite clauses in sign languages seem to have used this strategy.

Aarons’ (1994) study on ASL syntax is the first work. She argues that a **topic phrase** [Pragmatics – Section 4.2] [Pragmatics – Section 4.3.2] [Syntax – Section 2.3.3.3] can be extracted out of an embedded clause only if this clause is non-finite. After showing that ASL has a dedicated position for topic phrases in the left periphery of the clause, she shows that a phrase that is the argument of an embedded non-finite verb can access the topic position in the main clause, while the same is impossible if the embedded verb is finite. This is illustrated in the following sentences. (a), according to Aarons, is a sentence with an embedded non-finite clause. (b) shows a permutation of the same sentence where the embedded subject moved to the topic position of the main clause. (c) shows the sentence where the embedded object moved to the same position.

- a. TEACHER REQUIRE JOHN LIPREAD MOTHER  
‘The teacher requires John to lipread mother.’ (ASL, Aarons 1994: 84)  
       top
- b. JOHN, TEACHER REQUIRE LIPREAD MOTHER  
‘John, the teacher requires to lipread mother.’ (ASL, Aarons 1994: 84)  
       top
- c. MOTHER, TEACHER REQUIRE JOHN LIPREAD  
‘Mother, the teacher requires John to lipread.’ (ASL, Aarons 1994: 84)

According to Aarons, (d) differs minimally from (a) because the verb REQUIRE selects a finite clause. This is indicated by the fact that the embedded clause contains an auxiliary-like verb (MUST). Since the clause is finite, no topic phrase can be extracted out of it, as shown by the ungrammaticality of (e) and (f).

- d. TEACHER REQUIRE JOHN MUST LIPREAD MOTHER  
‘The teacher requires that John must lipread mother.’ (ASL, Aarons 1994: 84)  
       top
- e. \*JOHN, TEACHER REQUIRE MUST LIPREAD MOTHER (ASL, Aarons 1994: 84)  
       top
- f. \*MOTHER, TEACHER REQUIRE JOHN MUST LIPREAD (ASL, Aarons 1994: 84)

Confirmation of the claim that arguments may not be extracted from finite embedded clauses comes from sentences with verbs that require tensed complements. According to Aarons, the verb SAY in ASL is such a verb. As a consequence, extraction of a topic from the complement clause of SAY is also ungrammatical.

Geraci et al. (2008) is the second work arguing for the presence of non-finite clauses in a sign language. They claim that in LIS, finite and non-finite clauses may be disentangled by using two tests. The first one is distributional. Although SOV is the unmarked word order in LIS, it is never possible for a finite clause to intervene between

the matrix subject and the matrix verb, as confirmed by the ungrammaticality of the example given below. That the embedded clause below is finite is at least consistent with the fact that it has an overt subject (although the presence of an overt subject is not a fully reliable test).

\*GIANNI PIERO CONTRACT SIGN KNOW

‘Gianni knows that Piero signed the contract.’ (LIS, Geraci et al 2008: 49)

However, when the matrix verb is a subject control predicate, as in (a) below, or an object control predicate, as in (b), the complement clause *can* appear in the SOV order, namely between the matrix subject and the matrix verb:

a. GIANNI CONTRACT SIGN FORGET

‘Gianni forgot to sign the contract.’ (LIS, Geraci et al. 2008: 52)

b. COOK MARIA MEAT EAT FORCE

‘The cook forced Maria to eat meat.’ (LIS, Geraci et al. 2008: 52)

The hypothesis that the embedded clause in these examples is non-finite is supported by the observation that the subject cannot be overt (MARIA in (b) is analyzed as being in the same clause as *force*, as in ‘John forced Mary out of the kitchen’).

The second difference between finite and non-finite clauses identified by Geraci et al. for LIS parallels what Aarons observed for ASL, namely that non-finite clauses are transparent for **extraction**, while finite clauses are not. Geraci et al. did not look at topic phrases but considered **wh-phrases** [Syntax – Section 1.2.3] instead: a *wh*-phrase can be moved out of a non-finite clause in control structures like the examples just given (a-b above), and it can reach the dedicated position for *wh*-phrases in the matrix clause. However, a *wh*-phrase can never be moved out of a non-finite clause.

The grammar writer may want to start his/her investigation by checking whether the complement clauses of likely cases of control verbs show the properties that set them apart from finite clauses in both LIS and ASL, namely the extractability of arguments. On the other hand, the positional test applied to LIS is only applicable to sign languages that display SOV as basic word order.

Other tests are in principle conceivable. We mention some. First, if a given sign language overtly expresses **tense** [Morphology – Section 3.2] [Semantics – Chapter 1] and **aspect** [Morphology – Section 3.3] [Semantics – Chapter 2], it would be interesting to check if the complements of control verbs are any different in this respect.

Second, the grammar writer might also want to check if the complement clause whose finite / non-finite status is being investigated can include a **time adverbial** [Syntax – Section 6.4.2.1] referring to a time different from the time of the matrix event.

Third, investigation of complements of perception verbs could also help the grammar writer to identify properties of non-finiteness, at least if perception verbs in

the sign language under investigation pattern as in languages where they can introduce non-finite structures.

Finally, it is always important to study **prosodic cues for clause boundaries** [Phonology – Section 2.2] and to investigate whether they are different for finite and non-finite clauses.

Overall, this is an area which is still rather unexplored, so much work is needed. In particular, differences between raising and control predicates have not been studied yet, but might well be detectable by future work.

### 3.2.1. Subject pronoun copy as a subordination property

In some sign languages, though not all, it is possible to have a pronoun at the end of the sentence which refers to the main clause subject. In a language with unmarked SVO order, this results in sandwiching the object clause between constituents of the main clause and the pronoun referring to the main subject. This phenomenon is called **Subject Pronoun Copy (SPC)** [Syntax – Section 2.6]. The availability of SPC differentiates between subordination and coordination and can be used as such by the grammar writer to introduce subordination.

In the following complex ASL sentence, the sentence-final pronoun <sub>1</sub>INDEX is **co-referential** / **co-referential** [Pragmatics – Chapter 1] [Pragmatics – Chapter 2] with the subject of the main clause, <sub>1</sub>INDEX, and there is no pause in the signing production.

<sub>1</sub>INDEX DECIDE <sub>i</sub>INDEX SHOULD <sub>i</sub>DRIVE<sub>j</sub> SEE CHILDREN <sub>1</sub>INDEX

‘I decided he ought to drive over to see his children, I did.’

(ASL, Padden 1988: 88)

However, in constructions with coordination, the subject pronoun copy can only be co-referential with the subject of the second conjunct but not with the subject of the first conjunct, as shown by the ungrammaticality of the following example.

\*<sub>1</sub>HIT<sub>i</sub> <sub>i</sub>INDEX TATTLE MOTHER <sub>1</sub>INDEX

‘I hit him and he told his mother, I did.’

(ASL, Padden 1988: 86)

Thus, SPC can be used as a diagnostic for subordination in a language that allows it. If the complex construction allows for the presence of a pronoun in clause-final position referring to the main clause subject, one can conclude that the clause sandwiched between the main verb and the final subject pronoun is subordinated, and it is not an instance of coordination.

This diagnostic is not applicable to all sign languages, however. In NGT, for instance, a subject pronoun copy co-referential with the subject of the main clause is not



allowed after the subordinate clause. Rather, it must appear after the main verb, as shown in the example below (where the SPC is marked by boldface):

INGE POINT<sub>right</sub> KNOW **POINT<sub>right</sub>** POINT<sub>signer</sub> ITALY<sub>signer</sub> GO.TO<sub>neu.space</sub>  
'Inge knows that I am going to Italy.' (NGT, Van Gijn 2004: 94)

The grammar writer is advised to verify whether SPC is possible in the sign language investigated before using it to introduce a distinction between coordinate and subordinate structures apart.

### 3.2.2. Position of question signs

In some sign languages, the position of a **question sign** in an embedded clause may be restricted to a single position, in contrast to a variety of positions available for a question sign in a simple question. In ASL, for instance, question signs in simple questions may occupy three different positions: they may be clause-initial, clause-final or in situ, as in (a) below. However, in indirect questions, wh-signs invariably occupy the initial position within the subordinate clause, regardless of their syntactic role, as the contrast between (b) and (c) shows.

- a. MEG BUY WHAT  
'What did Meg buy?' (ASL, Caponigro & Davidson 2011: 343)
- b. \*TIM KNOW MEG BUY WHAT
- c. TIM KNOW WHAT MEG BUY  
'Tim knows what Meg bought.' (ASL, Caponigro & Davidson 2011: 349)

Thus, when introducing subordinate clauses, and more precisely indirect questions, the grammar writer could investigate the possible positions of question signs, and contrast these with possible positions of question signs in simple questions.

### 3.2.3. Spreading of non-manual markers

Another property that seems to go with subordination and can thus be used as such to describe subordination the spreading behavior of the non-manual markers. The two conjuncts of a **coordinate structure** [Syntax – Section 3.1] may display different non-manual markers and there may be a pause between the two conjuncts.

In contrast with coordinate clauses, in complex sentences, a non-manual marker that originates in the main clause may spread over the subordinate clause with no pause at the potential clausal boundary, hence, marking the embedded status of the subordinate clause with respect to the matrix clause. In (a) below, the non-manual for

negation ('n') associated with the main clause spreads over the embedded complement clause, and similarly in (b), the yes/no question non-manual marker ('yn') spreads over the entire sentence including the embedded clause.

- a.  $\frac{\text{INDEX WANT } j\text{INDEX GO-AWAY}}{n}$   
 'I didn't want him to leave.' (ASL, Padden 1988: 89)
- b.  $\frac{\text{REMEMBER DOG CHASE CAT}}{yn}$   
 'Do you remember that the dog chased the cat?' (ASL, Liddell 1980: 124)

Thus, spreading of non-manual markers over both clauses may be taken as a property of a subordination relation.

However, two words of caution are in order. First, different non-manual markers associated with a single syntactic or semantic function may have different spreading domains. For instance, there may be more than one non-manual marker for negation in a given language and each non-manual marker may have different functions and different spreading domains. One may spread over only one sign, for instance the manual sign for negation, or over a small constituent such as a verb phrase, while the other may spread over the entire negative sentence. One would need to take the latter type into consideration in determining the subordination relation between two clauses. Second, the type of the main verb may affect the spreading domain of the non-manual marker for negation in complex clauses.

### 3.2.4. Interpretation of embedded negation in the matrix clause

It has been observed that some verbs such as *want* and *think*, when they take clausal objects, can be negated even though what is really negated is the embedded predicate. For instance, in the English examples below, (a) actually expresses (b) since the speaker has a wish and that is 'not going to school'. Even though the verb *want* seems to be negated by the auxiliary *don't* in (a), this sentence does not express that the subject does not want anything, i.e. negation does not negate 'wanting'. Similarly, the speaker uttering sentence (c) does not intend to express that the subject 'she' does not think. Rather, what 'she thinks' is that 'you are not angry'.

- a. I don't want to go to school.
- b. I want not to go to school.
- c. She doesn't think you're angry.

Thus, the possibility of having a negative marker associated with verbs such as *want* and *think* when they function as main verbs may point to a subordination relation since the negative markers in such constructions actually negate the embedded verb, not the main verb.

## **Elicitation materials**

The grammar writer is referred to the different types of subordinate constructions illustrated in the Blueprint for suggestions on specific elicitation techniques.

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### 3.3. Argument clauses

#### 3.3.0. Definitions and challenges

##### 3.3.0.1. What is an argument clause?

The obligatory constituents of a sentence are determined by the semantic properties of the predicates (verbs, adjectives). Clauses can be arguments of a predicate. Take a verb like *know* that takes two arguments, these can be either realized by two NPs [Syntax – Chapter 4], or by an NP and a clause.

John knows the truth.  
John knows that he will leave.

The verb *surprise* also takes two arguments. They can either both be realized by NPs, as in (a) below, or they can be realized by a clause and an NP, as in (b).

His decision surprised everybody.  
That he decided to leave surprised everybody.

The same holds for adjectives [Syntax – Chapter 5], such as *aware* below, that can take both a PP and a clausal argument.

I am aware of the problem.  
I am aware that he will leave soon.

This means that the semantic properties of predicates do not always specify a unique syntactic category which can serve as their arguments. Reconsider the examples above, repeated here.

- a. John knows that he will leave.