The quest for syntactic dependency. Sentential complementation in Sign Language of the Netherlands
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Goals of the quest

Before a quest can be undertaken it is necessary to be well prepared. We have to answer several questions in advance. What equipment might come in handy, and what will be redundant? What direction should be taken, and what pitfalls might await us? Even in a linguistic quest, like this one, these matters are relevant. However, first of all, an explanation will be given as to why this quest is attempted, and what the goals of this linguistic quest are.

1.1 Linguistics and signed languages

Linguistics is the study of natural human language. As such, the main task of a linguist is to determine the principles that underly the form of natural human languages, i.e. their syntax, morphology, and phonology. Characteristic for most linguistic approaches is that they do not want to describe the form, i.e. the grammar of one specific language. Rather their goal is to uncover the principles that determine the grammar of human languages in general. In generative linguistics this is seen as the innate knowledge that speakers have of language. The goal of the generative framework is to describe and formalise this knowledge, also called Universal Grammar or UG, and how this knowledge is acquired and used (Chomsky 1965, 1986a, 2001; Katz 1964).

UG is not a fully-fledged innate grammar, otherwise every human being would speak the same language. UG is a grammar that contains parameters that are set at a certain value on the basis of the environmental language the child in the acquisition process is confronted with. Furthermore, UG consists of principles that hold in all natural languages. It is these universal principles that generative linguists are particularly interested in. Of course, data drawn from

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1 Although generative grammar is the background of this descriptive study, I will use certain semantic parameters from functional grammar (Dik 1997a,b) that will be explained in chapter 2, section 2.1.1.
individual languages are taken into account in generative linguistics, too. In current approaches these data are always compared with data from other languages to detect which grammatical rules are language specific and which hold universally for human language.\(^2\)

Since signed languages are natural human languages, we expect that speakers of these languages utilise the same innate universal knowledge that speakers of spoken languages use, although the modalities of articulation and perception differ considerably. Indeed, neurolinguistic research has shown that when speakers of signed languages use these languages, that part of the left hemisphere where (spoken) language is located is active (Bellugi & Klima 1990, MacSweeney et al. 2002). Linguistic research in signed languages is therefore very interesting and highly relevant, because it can reveal whether the use of a different articulatory-perceptual modality to convey natural language, i.e. the gestural-visual modality in signed languages as opposed to the oral-auditory modality in spoken languages, has an effect on the form of language universals. In addition to the study of language universals and language specific principles, it is also interesting to see whether signed languages have underlying rules that are modality specific.

Linguistic research in signed languages is very recent. One of the first who looked at signed languages from a linguistic point of view is Tervoort (1953) who is often neglected in the literature. In his dissertation, Tervoort gives an accurate description and a phonological, morphological, and syntactic analysis of the signed language used by a small group of deaf children at the school for the Deaf in St. Michielsgestel (the Netherlands). Although Tervoort calls the signed language an esoteric and primitive language (Tervoort 1953:289), not more than a visual auxiliary system (ibid.:291) that uses many non-linguistic elements (ibid.:289), he considers it a (natural human) language. Moreover, he observes that this language was developing into a more fully-fledged linguistic system:

Further, we can speak of a language because - although not in general but merely in some cases - it is a matter of a morphological and syntactic

\(^2\) Cf. Newmeyer 1998 for the view that the study of one language is enough to uncover the system of Universal Grammar.
categorisation. ... The assumption that we here have a language that is in development and in which the morphology which is under construction has not yet led to a complete syntactic categorisation ... becomes increasingly more likely, the more one gets to know the people in the circles from which our informants have been taken: we see that the older people are the more they are in possession of a language system. (Tervoort 1953:288; my translation)

More influential, however, was Stokoe (1960). He proposed that signs in American Sign Language (henceforth, ASL), just like words in spoken languages, are built up of smaller components. With his research Stokoe stimulated many linguistic investigations into the structure of ASL (see Klima & Bellugi 1979 for an overview of the first studies). Systematic linguistic research on Sign Language of the Netherlands only started in the 1980s. Since the research tradition in general is so young, we often lack descriptions of the structure of signed languages that are necessary in order to determine how signed languages, or one signed language in particular, relates to spoken languages and UG.

An example of this gap in our knowledge is the syntactic relation between clauses in a sentence. Since the occurrence of the three main types of syntactic subordination (relative, complement, and adverbial constructions; see the next section) is no universal property of languages, a fundamental aspect of the syntax of any language is whether and where syntactic dependency between clauses and syntactic subordination is present. For Sign Language of the Netherlands, syntactic dependency between clauses and complex sentences in general, i.e. sentences that contain more than one predicate, have not been described to date. The present study attempts to give a descriptive and linguistic analysis of one type of syntactically dependent construction in Sign Language of the Netherlands, namely sentential complementation.

Vervolgens kunnen wij van een taal spreken omdat er – hoewel niet algemeen maar slechts in sommige gevallen – sprake is van een morphologische en syntactische categorisering. ... Het vermoeden dat wij hier te doen hebben met een taal die zich aan het ontwikkelen is en waarin de zich opbouwende morfologie nog niet geleid heeft tot een volledige syntactische categorisering ... dringt zich evenweld des te sterker op, naarmate men meer en meer met de kringen bekend raakt waaruit ook onze proefpersonen genomen zijn: men ziet daar met de leeftijd ook de taal als systematisch bezit groeien. (Tervoort 1953:288)
Sentential complementation has been thoroughly investigated in numerous spoken languages, but I know of only one signed language in which this topic has been tackled, though not very thoroughly, and that is ASL, by far the best investigated signed language until now. Throughout this study I will consider the results of former investigations into sentential complementation in ASL and compare these with the data from Sign Language of the Netherlands.

In this chapter the subject of this investigation will be described in more detail in section 1.2. I will briefly argue that a structural analysis of signed languages is possible and therefore desirable in section 1.3. In section 1.4 I will give a brief description of what we know till now about the grammar of Sign Language of the Netherlands and signed languages in general. In the last part, section 1.5, a brief overview of the contents of this dissertation will be given. In the further text, I will abbreviate the name Sign Language of the Netherlands as NGT that is derived from the official name of this language Nederlandse Gebarentaal.

1.2 Subject of this study

The goal of this study is to look for syntactic sentential complementation in NGT. In this language, constructions can be found that at first sight look like sentential complementation constructions but have no overt specialised marking for syntactic subordination, let alone for syntactic sentential complementation. For example, these constructions have no complementizer or special word order in the potential subordinated clause. Therefore, I will first try to find out if the syntactic relation between the clauses in potential NGT sentential complementation constructions is one of subordination. If this is indeed the case, then I will try to determine whether the subordinated clause is occupying an argument position of the main predicate, thus being a complement clause. Before defining syntactic sentential complementation I will first say a few words on syntactic subordination.

The traditional interpretation of subordination is that it represents dependency (the Latin subordinare from which the word is derived and the Greek term hypotaxis that is also used in linguistics, both meaning 'ordering under'). Commonly, subordination is defined as embedding of one clause into
another one, with possible reduction of the structure of the subordinated clause. A subordinate (or ‘lower’) clause is thus a clause within a superordinate (or ‘higher’) clause, the first being morphosyntactically dependent upon the latter. As such, subordination is opposed to coordination of clauses or parataxis (‘ordering beside’) in which the clauses are equivalent.

I deliberately use the term syntactic subordination and its (morpho)syntactic definition, to distinguish it from semantic subordination. Semantic subordination represents a functional asymmetry between two linked states of affairs in that one of them has pivotal status and the other an ancillary function (Cristofaro 1997:40). Semantic subordination thus includes syntactic subordination but it also includes structures that express a subordinate-like meaning but which show no morphosyntactic or formal dependency between the different clauses. This is shown in (1) from Gumbaynggir, an Australian language.

(1) Ni:gar yaraŋ duluŋmin nayingiŋ wa:gaya
men-SUBJ DEM laugh-PAST sit-PAST fire-LOC

“The men were laughing and sitting around the fire.”

‘The men who were laughing were sitting around the fire.’

(Eades 1979:320, in Cristofaro 1997:29)

The common way for English to convey the restrictive meaning of the proposition in (1) is to use a relative clause, whereas Gumbaynggir uses a parataxis construction, as can be seen from the literal translation. Gumbaynggir thus uses no specific sentence construction to convey the restrictive relation between the predicates in (1). The restrictive meaning has to be inferred from the context (Cristofaro 1997:28).

Syntactic subordination can be found in three different kinds of constructions, traditionally distinguished depending on the function the embedded construction has in the sentence. If the embedded construction functions as the argument of a matrix predicate, it is a complement clause, as in (2a). If it functions as an adverbia l or non-argument, it is an adverbial clause (2b). If it modifies a nominal head, the embedded construction is a relative clause (2c).
(2)  a. Daniël said that she killed ten cockroaches today.
    b. Whenever it is summer, I long for winter.
    c. My best friend’s microwave, which I set on fire last weekend, smells a bit odd.

As stated above, I will restrict this investigation to syntactic sentential complementation as in (2a), thus, to syntactically embedded clauses that function as the arguments of matrix predicates (they complete the event specified by the verb). However, just as subordination, sentential complementation can be defined in semantic terms as well. Since we do not know yet what sentential complementation looks like in NGT, we have to bear in mind that there is a chance that no syntactic sentential complementation can be found at all in this language. Therefore, I think it is necessary to briefly discuss what is meant by semantic sentential complementation.

Cristofaro (1997) describes semantic sentential complementation in the following way:

> Complement relations link two states of affairs one of which, namely the main, or pivotal one, entails that another one, namely the dependent one, is referred to. (Cristofaro 1997:83)

Just as semantic subordination, semantic sentential complementation can exist without syntactic sentential complementation. In (3) are two examples in which semantic sentential complementation is structurally reflected by paratactic constructions. Example (3a) is from Diegueño, a Yuman language spoken in San Diego County (California) and the northern part of Baja California (Mexico); example (3b) is from Lango, a Nilo-Saharan language of East Africa.
The main state of affairs in (3a) is the wanting event, which entails that another state of affairs is wanted: the event of 'going in there'. In (3b) the main state of affairs is the pressing event, which entails the dependent event of 'closing the door'. Still, the main and the dependent events in (3a) and (3b) are expressed by two clauses that both can occur as independent matrix clauses. I use the term _clause_ to refer to units that maximally contain a predicate (verbal or non-verbal) and the arguments and adjuncts that accompany this predicate. Such a unit can stand on its own and function as a _sentence_, but sentences can consist of more than one clause as well. The syntactic constructions in (3a-b) thus are _paratactic_ constructions rather than _subordination_ constructions.

In the remainder of this study, I will use the term _subordination_ to refer to syntactic subordination and the term _sentential complementation_ to refer to syntactic _sentential_ complementation. Furthermore, I will henceforth use the bare terms _complement_ and _complementation_ to refer to _sentential_ complement and sentential complementation, respectively.

This investigation is confined to object _complement_ clauses. Two other _complement_ constructions are excluded: subject _complement_ clauses and _complement_ clauses of _noun_ phrases. An example of both constructions is in (4a) and (4b), respectively.
(4)  

a. *That Gisela won a trip to the Bahamas made her very happy.*

b. *The fact that I set my best friend’s microwave on fire emphasises my extreme clumsiness.*

Both types of complement clauses were originally included in a pilot study on NGT. The results of the test items that tried to elicit subject complement clauses showed that it was often the case that the test item was paraphrased as two independent clauses. For example, the Dutch version of the subject complement clause of (5a) was translated into NGT as in (5b). In (5a) the italicised clause functions as the subject of the predicate *to be expected*, whereas the two predicates in (5b), *to cut down expenses* and *to expect*, have their own subjects, *government* and *I*, respectively. Therefore, the NGT example in (5b) does not contain a subject complement clause. Rather, it consists of two independent sentences, or two clauses in a parataxis relation.

(5)  

a. *That the government has to cut down expenses considerably was to be expected.*

b. *The government has to cut down expenses enormously; I already expected something like that.*

With respect to noun complementation, it was often the case that the complement-taking noun was not expressed resulting in a paraphrase of the
whole utterance. Sometimes, the complement-taking noun was expressed as a verb, as in example (6b). The English equivalent of the Dutch test item is given in (6a), with the complement sentence being italicised.

(6) a. The fear that the disease might return made the man very insecure.

b.

\[
\begin{align*}
\text{MAN} & \quad \text{POINT}_{\text{right}} & \quad \text{BE} \cdot \text{FRIGHTENED} & \quad \text{DISEASE} & \quad \text{RETURN} / / \\
\text{POINT}_{\text{right}} & \quad \text{INSECURE}
\end{align*}
\]

'The man is frightened that the disease returns. He is insecure.'

(NGT)

In (6b) instead of a complement-taking noun fear the verb to be frightened is used, and the first clause of (6a) is turned into a separate sentence.4

The results of the pilot test on subject complement clauses and noun complementation thus turned out to be unclear. I decided therefore to concentrate on object complement clauses only, and to leave the topics of subject complement clauses and noun complementation for future research. It should be noted, however, that the results in (5b) and (6b) do not exclude the possibility that subject complement clauses and noun complement clauses exist in NGT.

1.3 Structural analysis of signed languages

Although a large number of the studies into the grammar of signed languages is descriptive in nature, they all assume explicitly or implicitly a hierarchical linear

4 The point signs (also called index signs in the literature) are signs that consist of a pointing movement to a certain location in space. These signs can be found in every signed language. These signs determine that a person or object is at a certain location in signing space. The location pointed at by the point sign can subsequently be used in the verbal agreement and pronominal system (see section 1.4 in this chapter).
phrases structure. Among the few researchers that adopt a non-structural analysis of signed languages (among others, see Liddell’s later works, especially Liddell 2002, Liddell & Metzger 1998, as well as Taub 1997) is Denis Bouchard. In this section I will briefly discuss one of the articles in which Bouchard explicitly states his view on the analysis of signed languages. I will refute his arguments for a non-structural analysis and thereby defend the point of view that signed languages, just like spoken languages can (and should) be analysed structurally. This standpoint will be assumed throughout this study.

In his article Sign languages & language universals: the status of order and position in grammar (1996), Bouchard argues that signed languages should not be analysed structurally (cf. also Bouchard & Dubuisson 1995). His reasoning is as follows: ASL can be analysed in a non-structural way, therefore it is not necessary to analyse this language structurally. In Bouchard’s own words:

… the descriptions of data from ASL given in several publications are at least as compatible with non structural analyses; hence, … it is incorrect to conclude that, because of the data as described may receive a structural account, then ASL must be so described. (Bouchard 1996:101)

However, following this line of reasoning English and French (and every other natural language) should be analysed non-structurally as well for they can be analysed in a non-structural way, cf. among others, cognitive linguistic approaches to natural language (Lakoff 1987, Langacker 1987), or anthropological linguistics (Hymes 1964). However, Bouchard does not draw this conclusion and does not analyse English and French in a non-structural way (cf. Bouchard 1984).5

Bouchard wrote his 1996 article as a reaction to Kegl et al. (1996) which was, in turn, a reaction to Bouchard & Dubuisson (1995). Bouchard criticises Kegl et al. (1996) for “recod[ing] the visual-gestural coding of ASL” (Bouchard 1996:130) into a structural coding because they assume that the temporal (read: sequential) dimension is the prominent dimension in ASL. According to

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5 Bouchard even considers all signed languages to be non-structural languages, as opposed to English and French which he calls structural languages (cf. Bouchard 1996:136).
Bouchard "the visual-gestural modality [i.e. signed languages] has means other than order to code information" (ibid.:132). With this Bouchard means that in signed languages the simultaneous dimension is prominent, i.e. the simultaneous expression of two signs, "because there are more articulators" (ibid.:111). Although signed languages may very well have the potential of expressing two signs at the same time, more research needs to be done to see whether they really make use of this potential and under what conditions. From my own experience, I know that complete simultaneous expressions of signs do not occur that often. Most of the time they show some overlap only, i.e. the signs are made more or less linearly, one hand starting to make a sign \( \beta \) when the other hand is still busy with a sign \( \alpha \). Furthermore, these (partly) simultaneous signs, if they occur, always seem to be part of the same constituent, e.g. a verb and its object, or a noun and its index.\(^6\) Hence, although signed languages have the potential of expressing two signs simultaneously, the distribution of these simultaneous expressions is limited.\(^7\)

If we look at sign language syntax it turns out that the temporal/sequential dimension is prominent. This can be best illustrated with the order of constituents in a simple one-predicate sentence. In (7) are examples from NGT, ASL, German Sign Language (DGS, Deutsche Gebärdensprache) and Greek Sign Language (GSS, Ελληνική Νοηματική Γλώσσα - Elleniki Noematikí Glossa).\(^8\) The signs are expressed linearly without any extra grammatical simultaneous coding superimposed on the linear string. As becomes clear from these examples, the meaning of the proposition can be expressed using one word order only, except for NGT where two word orders are possible. These word orders can be seen as the basic word orders of these signed languages. In ASL and GSS the basic word order is SVO, in DGS SOV, and in NGT SVO/SOV. Other word orders are judged as ungrammatical (indicated by the

\(^6\) There are constructions where both hands represent objects which perform an action in relation to one another, e.g. the hands represent cars that bump into one another, or two persons that meet each other or kiss each other, or two animals one of which catching the other one. It is not clear at the moment how these constructions should be analysed, e.g. as one clause or sentence, or two (the hands expressing two predicates simultaneously).

\(^7\) There is another instance in signed languages where simultaneity can be found and that is where certain non-manual expressions are used to utter illocutionary force, such as affirmation, interrogation, etc. These non-manual expressions have been analysed as intonation (Sandler 1999, Wilbur 2000). This same simultaneity can be found in spoken languages as well.

\(^8\) I thank Roland Pflau and Klimis Antzakas for their help with the DGS and GSS data.
Thus, the **temporal/sequential dimension** _does_ play a role in signed languages.

**b.** MARY LOVE JOHN

'Mary loves John.'

When CP-internal constituents alone are considered, it is readily apparent that the underlying "unmarked" word order is SVO. ...no other word order yields the interpretation indicated.

(ASL; Neidle et al. 2000:59, ex.24)
According to Bouchard there is no empirical evidence in signed languages which would favour a structural account, because signed languages have a relatively free word order. Unfortunately, Bouchard does not mention on what data he bases this statement. In addition to the examples in (7) there exists extensive literature in which it has been demonstrated that other signed languages have basic word orders as well (among others, Bergman & Wallin 1985 for Swedish Sign Language, de Quadros 1999 for Brazilian Sign Language, Smith 1990 for Taiwan Sign Language, Vermeerbergen 1997 for Flemish-Belgian Sign Language; see for NGT also Coerts 1994, for ASL also Neidle et

\footnote{The native speaker of Greek Sign Language who gave the judgements was not sure about the grammaticality of this order; he thought that extra non-manual markers might be used in order to improve the sentence in which case this order without non-manuals is at least marked.}
al. 2000, for DGS also Pfau 2001). Actually, Bouchard & Dubuisson (1995) are the only ones to claim that there is a free word order but this claim was based on research on and data from Quebec Sign Language (LSQ, Langue des Signes Québécoise) only. First of all, it is strange to extend this claim to every signed language. Furthermore, as Neidle et al. (2000) point out, the methodology by which Bouchard & Dubuisson collected their data can be called into question:

As is evident from the excerpts from Lelièvre 1996 and Dubuisson 1996...the informants' actual judgements of the acceptability of differing word orders was, in essence, disregarded. (Neidle et al. 2000:60)

If another surface order occurs in signed languages, this order appears in certain contexts only and is accompanied by special prosodic markers to highlight the fact that this is not the basic order. For example, in NGT the object that normally follows the subject can occur in a position before the subject, though only if it is marked with a special topic prosody (represented by \(\text{t}\) in the glosses). This prosody is expressed non-manually and manually. The non-manual part of this prosody consists of raised eyebrows, a lowered and/or stretched chin, and wide open eyes. The comment part of this construction can be marked by an affirmative prosody (represented by \(\text{aff}\) in the glosses) that consists of repeated head nods over the rest of the sentence. In addition, the manual part of the topic prosody can consist of a hold of the last sign of the topic constituent and a slow retraction of this last sign.\(^{10}\) A non-basic word order also evokes another interpretation. An example is given in (8).

\(^{10}\) It should be noted that not in every case all non-manual and manual components are present, or expressed with the same duration. For example, it is possible that the topic constituent is marked by a lowered and/or stretched chin and a slow retraction of the last sign only, or that the raised eyebrows start a few hundredths of a second before the lowered and/or stretched chin and ends later. This observation occurred in my data with other non-manual markers as well, e.g. with what has been called the yes/no-question and wh-question grammatical markers. Cf. footnote 3 in the gloss conventions.
Non-basic word orders occur in spoken languages as well. In Dutch, the object can also be fronted, as in *DE MAN bijt de hond ‘the dog bites THE MAN’*. Here the object in the order OVS is marked with focus prosody to evoke a contrastive meaning ‘it is the man, not the child that the dog bites’. Also in Dutch, the order VSO *Leest Ellie Nabokov? ‘does Ellie read Nabokov?’* with a special yes/no-question intonation evokes an interrogative meaning. Thus, although signed languages, and languages in general, use among other things different surface orders to express different meanings, this points by no means to a free or relatively free word order, but rather to a relatively strict order, in which certain grammatical information can be coded in linear structure. I therefore conclude that signed languages, like spoken languages can (and should) be analysed structurally.

1.4 What we know about signed language grammar and NGT

In the following I will explain some of the things that we already know about signed language grammar, with particular reference to NGT.11 The aspects explained here are necessary for later discussion.12

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11 Certain grammatical aspects that were discovered to be part of a specific signed language grammar, turned out to hold for signed languages in general (or, at least for the signed languages that are investigated until now). Apparently, particular grammatical aspects are modality-dependent. As will become clear from the main text, these aspects of the grammar are presented in this section as holding for signed languages in
1.4.1 Basic components of signs
As could already be seen in the signed language examples in (5b), (6b), (7), and (8), sentences in signed languages are built up from (smaller) phrases, just like sentences in spoken languages. These smaller phrases are composed of single signs that can be compared to words. And just like words, a sign can be decomposed into even smaller parts. Roughly, five parts are discriminated of which a sign is build up. A sign is made at a certain location in signing space or on the body of the signer. Signing space, also called neutral space is a three dimensional space approximately a quarter of a sphere in front of the signer at about waist height, a quarter of a sphere above the signer, and the space in between, see the picture in (9).

Furthermore, a sign is made with a certain hand configuration determined by the number of fingers and the position of these fingers, the orientation of the hand and the fingers is also important, the hand can move through the signing space or make a hand internal movement during a sign, and the sign can be accompanied by a non-manual component that can vary from a certain facial behaviour to making a sound with the mouth. In (10) the components of a sign are demonstrated with my name sign.

general. Grammatical aspects for which I am not sure whether they hold for all signed languages, are presented explicitly as part of NGT grammar.
12 See Neidle et al. (2000) for a more extensive discussion of morphosyntactic aspects of signed languages, and in particular ASL.
My name sign is signed in neutral space. The hand configuration is the so-called 1-hand in NGT because it represents the letter 1 in the NGT hand alphabet. The orientation of the hand palm is away from the signer while the fingers (or actually the knuckles) are pointing upwards. The hand makes a small upwards and forwards arc movement and the sign is not accompanied by a special non-manual marking.

The components just described are often compared to phonemes in spoken languages but in many cases they can probably better be compared to morphemes (Zwitserlood 2003, Zwitserlood et al. 2003). I will come back to this issue with respect to locations and hand configurations in a moment. For more information on the phonetics and phonology of NGT and signed languages in general, I refer to Brentari (1998), Crasborn (2001), van der Hulst (1996), van der Kooij (2002), and Uyechi (1994).

1.4.2 Localisation
Referents of signs can be localised in signing space by point signs (often glossed as INDEX in the literature, but glossed as POINT in this study, see fn. 3 in this chapter). This is done by pointing to a certain location in signing space before or after a sign that for example refers to a person. From now on, this person is connected to that particular point in signing space that can be used in the pronominal and verbal agreement system. Let’s illustrate this with the following examples.

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13 In this way, inanimate entities, whole situations, and even thoughts and ideas can be localised at points in signing space as well.
In (11) *Ingeborg* is localised at a location to the right of the signer. If the signer points to this location again in (11), the point sign should be considered as a pronoun referring to Ingeborg. Note that pronouns in English (and many other spoken languages) are ambiguous. Thus, in the English translation of (11) the pronoun *she* can refer to Ingeborg or any other female person. In signed languages point signs used as pronouns are not ambiguous because the location to the right of the signer in the discourse of (11) uniquely refers to Ingeborg, and not to someone else. Every other person that will play a role in the discourse of (11) will be localised at another unique location in signing space.

MacLaughlin (1997) and Neidle et al. (2000:88) analyse the point sign that localises another sign in signing space as a determiner, but for NGT the exact status of point signs is still unclear. In her dissertation, Zwitserlood suggests that the point sign is actually an intransitive predicate that expresses the localisation of a referent (Zwitserlood 2003:145, fn.2) with one slot for location agreement. Her main motivation for this analysis is that this sign behaves in most respects similar to verbs of motion and existence, although Zwitserlood does not discuss this further. Zwitserlood’s analysis predicts that the sign phrase in (12) is a grammatical independent sentence in NGT, which can be questioned and negated, among other things. This analysis predicts also that the string of signs in (13) is grammatical, for a point sign can function as a pronoun

(NGT)
as well. Whether the strings of signs in (12) and (13) are grammatical NGT sentences or not, is not yet obvious.¹⁴

(12) [Diagram of signs indicating movement]

(NGT)

(13) [Diagram of signs indicating movement]

(NGT)

It would be very interesting to investigate the consequences of this proposal more deeply. For the time being, I have glossed point signs in this study as POINT and considered point signs that localise other signs in signing space as part of the determiner phrase (DP).

1.4.3 Verb agreement

Example (14) shows how locations in signing space work in the verbal agreement system. The NGT verbs to tease in (14a) and to visit in (14b) have no fixed locations. In the phonological specification of the roots of these verbs, however, the information is stored that they move from one location in signing space to another (Zwitserlood 2003, Zwitserlood et al. 2003), and that the beginning location refers to the subject of the teasing or visiting event and the end location to the object. Again, Ingeborg is localised at a location to the right of the signer. Since, the verb to tease moves from this location to the location of the signer it means that Ingeborg is teasing the signer. The verb to visit in (14b) is moving from the signer to the location where Ingeborg is localised and therefore means that the signer is visiting Ingeborg.

¹⁴ As Josep Quer rightly remarks, it should be carefully checked whether non-manual markings make the sentences in (12) and (13) grammatical.
Besides predicates that use two locations that express verbal agreement there are also predicates that have only one location that expresses agreement. Whether this one location denotes subject or object agreement depends on the phonological specification of the verb root (Zwitserlood 2003, Zwitserlood et al. 2003).

Location as it plays its role in the pronominal and verbal agreement system thus constitutes a morpheme rather than a phoneme. The same holds for hand configuration. In predicates that express the motion, location, and existence of a referent the hand configuration is not established in the phonological specification of the verb's root (Zwitserlood 2003, Zwitserlood et al. 2003) but determined by the shape characteristics of the argument. The hand configuration in these predicates indicates the referent involved in the event expressed by the predicate. For this reason, in these cases hand configuration should be considered as an agreement morpheme as well (van Gijn & Zwitserlood 2003). This is illustrated in (15) for the NGT verb *to fall* (from van Gijn & Zwitserlood 2003:8, ex.4).
If the signer wants to express that a book falls, he will use a hand configuration that resembles the shape of a book, as in (15a). If the falling referent is a pen, the signer will choose a hand configuration that matches the long and narrow shape of a pen (15b), and if the entity is a human being or an animal, usually a hand configuration with two extended fingers that represent the legs is chosen (15c). The set of hand configurations that are used as agreement morphemes form a small, closed class. Van Gijn & Zwitserlood (2003) call this type of agreement gender agreement, because it is reminiscent of the gender agreement system found in Bantu languages.

The hand configurations used in the agreement system are usually described as classifiers. For spoken language classifiers, Corbett (1991) and Croft (1994), among others, claim that these are not agreement markers. The main reasons for their claim are that the set of classifiers in a language is often very large, and that classifiers are not obligatory. However, in signed languages, the set of ‘classifiers’ is limited, at least in NGT. Moreover, these hand configurations appear obligatorily on verbs of motion, location and existence. Therefore, with van Gijn & Zwitserlood (2003) I still support the view that in signed languages, hand configurations in predicates of motion, location, and existence are agreement morphemes (see also Glück & Pfau 1999).

In addition to predicates that show location and gender agreement, the so-called agreement verbs, signed languages also have a set of verbs that do not show overt agreement. These non-agreement verbs have been a mystery in signed linguistics for many years, because just like agreement verbs, non-agreement verbs are able to occur in the absence of overt arguments. Let me explain this first.
1.4.4 Null arguments

All signed languages investigated till now seem to have the possibility not to express the arguments of a predicate overtly, if these arguments can be recovered from the context. Both subject and object arguments can be left unexpressed. If a verb shows agreement, this agreement allows for recovering the null arguments. Thus, in the second sentence of (16) the agreement clarifies that the person who gives the flowers is the signer, and the person who receives the flowers is Ingeborg. Note that the subject of the first clause is also left unexpressed overtly.

However, null arguments are possible in the absence of agreement as well in NGT. This can be seen in sentence (17).

In (17) the arguments cannot be recovered from agreement, because the NGT verb to like does not show any agreement marking. For the same phenomenon in ASL, Lillo-Martin (1986, 1991) gave the following analysis. She considers null arguments in the presence of agreement as $pm$-s, that is, as null
pronouns that are licensed and identified by the subject or object agreement of
the predicate. Null arguments in the absence of agreement are compared by
Lillo-Martin to null arguments in Chinese, a language without verbal agreement.
These null arguments are regarded as null variables that are licensed and
identified by (null) topics (see the works by Lillo-Martin and van Gijn &
Zwitserlood 2003 for more detailed explanations). This analysis was also
adopted by van Gijn & Zwitserlood for NGT. Neidle et al. (2000) reject Lillo-
Martin's analysis. They claim that null arguments in ASL are always pro and thus
always licensed and identified by agreement. If manual agreement, i.e. location
agreement in their view, is absent, then the null arguments are licensed and
identified by non-manual agreement which is established by head tilt to a
particular location in signing space for subject agreement and eye gaze to a
certain location for object agreement.

Van Gijn & Zwitserlood could not find any evidence for the presence of
non-manual agreement in NGT. Together with Pfau they present yet another
analysis (Zwitserlood et al. 2003) which I take over and support in this study. In
Zwitserlood (2003) and Zwitserlood et al. (2003), the agreement system of
signed languages is formalised in a Distributed Morphology (henceforth, DM)
framework. In DM linguistic elements like words and phrases are built up from
abstract roots and morphosyntactic features that are inserted into terminal
nodes and which are subject to derivational operations such as movement,
merger, and fusion. Only after these syntactic operations have taken place are
roots and features connected with phonological features, or vocabulary items
(see Halle & Marantz 1993, Harley & Noyer 2001 for more details on
derivations in DM). With regard to predicates in signed languages this means
that every predicate has a root that is combined with morphosyntactic features,
among which agreement features. It depends, however, on the phonological
specification of the verb's root whether vocabulary items can be inserted for
the various agreement features. Thus, if the verb root is already phonologically
specified for hand configuration and location, the agreement morphemes
cannot be connected with vocabulary items, whereas if the verb root is not yet
phonologically specified for hand configuration and/or location, a certain hand
configuration and/or location can be inserted (see Zwitserlood et al. 2003 for detailed derivations of all types of predicates).

Thus, in the approach of Zwitserlood (2003) and Zwitserlood et al. (2003) null arguments in the presence and in the absence of agreement are considered to be pro-s that are licensed and identified by abstract agreement features.

Although the approach of Zwitserlood and Zwitserlood et al. is promising, its consequences need to be investigated more thoroughly, just as the occurrence of certain phenomena that do not seem to fit with what their analysis predicts. For example, in NGT it is not possible to utter the second sentence in the context of (18), because it is not clear who loves who.

(18)

\[
\text{signer:VISITright} \quad \text{INGEBORG} \quad \text{POINTright }/\!\!/ \quad \text{*LOVE}
\]

The ungrammaticality of the second sentence in (18) is probably due to pragmatic reasons. If a context is created in which one of the two arguments is a non-animate entity, the second sentence in (18) might be fully grammatical, because pragmatics determines that the meaning of the sentence agrees with the default interpretation in which a non-animate entity is loved and not the thing that loves. However, more research is necessary on this subject.

In the case of (18) in NGT, and in certain other signed languages like DGS (Rathmann 2000) and Taiwan Sign Language (Smith 1990), an auxiliary verb is used that shows subject and object agreement and thereby clarifies the relationship between the null arguments. In NGT this auxiliary verb is the sign OP (Bos 1994), as in (19).

(19)

\[
\text{signer:VISITright} \quad \text{INGEBORG} \quad \text{POINTright }/\!\!/ \quad \text{LOVE} \quad \text{rightOP signer}
\]
'I visit Ingeborg. (She) loves (me).'

(NGT)

1.4.5 Non-manual marking
A last aspect of signed language grammar that I want to discuss here is non-manual marking at the sentence level. This marking occurs over phrases and is realised by facial behaviour and movements of the upper body. An example of two such markers could already be seen in sentence (8) in this chapter. In this sentence a topic and an affirmative marker occur. In early research, these markers were assumed to be syntactic markers. Most non-manual markers, however, consist of several components, e.g. the topic marker contains in addition to a manual component, the non-manual components raised eyebrows, lowered and/or stretched chin, and wide open eyes. Since not every component of a marker is always present, and since the duration of these markers does not always have the same length, I consider these non-manual markers on the sentence level as prosodic markers (cf. fn. 3 in the gloss conventions). In part c of the gloss conventions is a list of the non-manual markers and their components as appear in this study. Other aspects of NGT and signed language grammar will come up for discussion in the following chapters.

1.5 Overview
In chapter 2, I will give a brief overview of the literature on complementation. In particular, I will describe the semantic and syntactic characteristics that have been proposed for complementation. The semantic characteristics form the input of the classes of complement-taking predicates that I will investigate in NGT. The syntactic characteristics form the starting-points for the tests to elicit complement constructions in NGT. Chapter 2 also describes the methodology used and gives more information about the informants.

In chapters 3 to 6 the various tests that were carried out are described in detail and their results are presented and discussed. The goals of these tests is to find out if syntactic complementation can be found at all in NGT, and if so, to reveal the syntactic characteristics of sentential complementation in NGT. Chapter 3 deals with a test on argument structure. In chapter 4 a test on right
dislocation is presented. In chapter 5 a test that involves the non-manual negation marker is discussed and chapter 6 tests $wh$-extraction in $wh$-questions and topicalisation structures.

Chapter 7, finally, gives a summary and a conclusion.