THROUGH as a free aspect marker in Sign Language of the Netherlands*

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This study presents a descriptive analysis of the aspectual particle THROUGH *in Sign Language of the Netherlands, based on naturalistic corpus data. The results show that* THROUGH *marks both continuative and habitual aspect on a wide range of lexical verbs, and can appear in varying syntactic positions (i.e., both following and preceding the main verb). These results challenge previous observations by Hoiting & Slobin (2001), who argued that* THROUGH *only marks aspect on lexical verbs when phonological features of the verb block aspectual modification, and that it is restricted to the syntactic position immediately following the main verb. In our data* THROUGH *appears to be less restricted than their analysis suggests. Further, the present study challenges the results in Oomen (2016), who found that* THROUGH *did not occur in her data. Finally, in the corpus data,* THROUGH *sometimes appears without a lexical main verb, a pattern that was not attested in previous studies. In some sentences, this is due to ellipsis of the main verb, while for others, in which* THROUGH *seems to function as a lexical verb itself, it will be argued that* THROUGH *might be in the process of degrammaticalization.*

1 Introduction

In natural languages, sentences generally must receive an interpretation with respect to aspect. Aspect conveys information about the internal temporal structure of a situation (Comrie 1976). For example, a situation might be presented as ongoing (continuative aspect), as in the sentence *he continues working*, or as repeated over an extended period of time (habitual aspect), as in *he always works* (Comrie 1976; Hoiting & Slobin 2001). A speaker has several morphosyntactic strategies at his disposal to mark different aspectual distinctions (Comrie 1976).

In sign languages, aspect can be marked by either modulating the verb or by using a free aspect marker. This study focuses on one free aspect marker in Sign Language of the Netherlands (*Nederlandse Gebarentaal*, NGT), namely

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THROUGH. According to Hoiting & Slobin (2001), THROUGH is a borrowing of the Dutch aspectual particle *door* ('through') that marks continuity of a process. According to them, THROUGH marks continuative and habitual aspect in clauses with lexical verbs that cannot inflect for aspect themselves because they are specified for either internal movement or body contact. Further, they observe that THROUGH is restricted to the syntactic position immediately following the main verb. Their analysis was previously challenged by Oomen (2016), who did not find any instances of THROUGH used to mark habitual or continuative aspect.

This study presents a descriptive analysis of the use of THROUGH as an aspect marker based on naturalistic corpus data. The results challenge the observations by Oomen (2016), as they show that THROUGH is used to mark habitual and continuative aspect. Moreover, our results challenge the analysis by Hoiting & Slobin (2001), as the corpus data suggest that THROUGH can be used in more than one syntactic position (i.e., also preceding the main verb), and that it combines with a wider range of main verbs (i.e., not only those with internal movement or body contact). Furthermore, THROUGH sometimes appears without a main verb. In some sentences, this is due to ellipsis of the main verb, while for others, it will be argued that THROUGH might be in the process of degrammaticalization, as it seems to function as a verb itself. Thus, this study shows that previous observations on the use and distribution of THROUGH as an aspectual marker certainly are not the whole story.

Section 2 provides some theoretical background on aspect marking more generally, as well as on aspect marking in sign languages. Subsequently, previous research on THROUGH will be presented in more detail. Section 3 will present the relevant research questions, and Section 4 will describe how the corpus data were analysed. In Section 5, I will present the quantitative results as well as the discussion of these results and suggestions for future research. Finally, Section 6 will draw a conclusion.

2 Background

2.1 Aspect in spoken languages

Comrie (1976: 3) defines aspects as "different ways of viewing the internal temporal constituency of a situation". Examples of different aspectual distinctions are perfective aspect, which presents a situation as a whole and does not refer to the internal temporal structure, and imperfective aspect, which refers to the internal temporal structure of a situation, viewing it from within (Comrie 1976). This difference is shown in (1): (1a) conveys a building event in its entirety, i.e. perfective, whereas (1b) conveys that it was in progress, i.e. imperfective (Smith 1997: 15).

(1) a. John and Mary built a rock garden last summer.

b. John and Mary were building a rock garden last summer.

Aspectual systems are assumed to consist of two components: situation aspect and viewpoint aspect (Smith 1997). Situation aspect concerns intrinsic temporal properties of a situation. For example, activities are events that do not have an inherent endpoint and that occur for a period of time, such as *run* or *sleep*, whereas achievements do have an inherent endpoint and happen in an instant, e.g. *win* and *arrive* (Vendler 1967; Rathmann 2005). On the other hand, viewpoint aspect has to do with how a situation is presented. Perfective and imperfective aspect are examples of this type: (1a) and (1b) show that a speaker may have a choice to present a situation from either the perfective or the imperfective viewpoint. Another example is habitual aspect, which describes the repetition of a situation over an extended period of time (Comrie 1976).

This study will focus on viewpoint aspect, that is, on how an eventuality is presented linguistically (Rathmann 2005). Spoken languages have several morphosyntactic strategies to mark different aspectual distinctions. For example, progressive aspect (which indicates continuousness) is marked in different ways in different languages. Dutch uses a locative expression to mark progressive aspect, see example (2a) (Comrie 1976: 99). In other languages, progressive aspect is formed by affixation, e.g. in Quechua, where affixation of *-ju-* to the verb stem forms progressive aspect as in (2b) (Cole 1982: 150). In English, a periphrastic structure with the copula *to be* forms progressive aspect (Oomen 2016).

(2) a. Hij is aan het tuinieren.
he is at the gardening
'He is gardening.'

b. Shamu-ju-ni.
come-PROG-1
'I am coming.'

2.2 Aspect in sign languages

In sign languages, aspect can be marked in two ways: by modulations of the verb sign or by free functional elements (Pfau et al. 2012). I will first discuss verb modulations, and will then turn to the free functional elements.

Klima & Bellugi (1979) provide an extensive overview of the dynamic features that can be superimposed on the verb in order to make aspectual

distinctions in American Sign Language (ASL). According to them, verb features that can change under aspectual modulation are, for example, tension, reduplication, pauses, and rate of movement. They distinguish fifteen aspect types, but Rathmann (2005) reduces their list to six aspect types in ASL, five of which are bound inflectional morphemes (i.e., verb modulations): continuative, iterative, habitual, hold, and conative. Continuative aspect, for example, contributes the meaning of a continuous, uninterrupted action. According to Rathmann (2005: 35), "the phonological form of the continuative morpheme usually consists of altering the movement of the verb root in such a way that it is extended for a longer time than in the citation form", as shown in Figure 1.

Figure 1: ASL STUDY+continuative (Rathmann 2005: 35)

Many sign languages have been reported to have rich systems of aspectual marking, and across sign languages, there are striking similarities in how continuative aspect is marked, often described as 'slow reduplication' of the verb (Pfau et al. 2012). Similarly, other aspectual verb modulations that Rathmann (2005) describes for ASL are found in other sign languages as well (Pfau et al. 2012). For example, he distinguishes iterative aspect, which contributes the meaning 'over and over again', and is realized by reduplication of the movement of the verb root. Similar patterns are reported for, for example, Swedish Sign Language (Bergman & Dahl 1994) and British Sign Language (Sutton-Spence & Woll 1999).

The second way to mark aspect in sign languages is by means of free morphemes (Pfau et al. 2012). Rathmann (2005) describes such a free morpheme for perfective aspect in ASL, namely the sign FINISH. Perfective aspect is conveyed by similar free morphemes in other sign languages, for example ALREADY in Israeli Sign Language, as shown in (3a) and (3b) (adapted from Meir 1999: 50). These two uses of ALREADY ('experiential perfect' and 'experiencer perfect', respectively) focus on the occurrence of a situation, but not on the exact time of that occurrence. These are two of the various meanings and uses of this aspect marker in Israeli Sign Language (Meir 1999).

(3) a. INDEX_2 ALREADY EAT CHINESE?[1]
'Have you ever eaten Chinese food?'

b. A: INDEX_1 LEG BREAK WEAK-AGO
'I broke my leg last week.'
B: INDEX_1 ALSO LEG ALREADY BREAK
'I have also broken my leg (sometime in the past).'

Similar free perfective markers have also been described by Brennan (1983) for British Sign Language, by Rathmann (2005) for German Sign Language, by Bergman & Dahl (1994) for Swedish Sign Language, by Zucchi (2009) for Italian Sign Language, and by Zeshan (2003) for Turkish Sign Language. These free markers are often grammaticalized from verbs or adverbs (Zucchi 2009; Pfau et al. 2012). In this study, I will focus on one free aspect marker that has been observed by Hoiting & Slobin (2001) for NGT. They describe a free marker glossed as THROUGH that does not mark perfective aspect, but continuous and habitual aspect. I will elaborate on this in the next section.

2.3 THROUGH as an aspect marker in NGT

Hoiting & Slobin (2001) analyse aspectual marking in NGT, more specifically the marking of two aspectual distinctions: habitual aspect and continuative aspect. They describe that continuative aspect expresses that an action is ongoing, while habitual aspect expresses that an ongoing action occurs habitually. In (4), examples of these aspectual distinctions are given (Hoiting & Slobin 2001: 128).

(4) a. *Continuative*: 'He's going on working (at the moment).'
b. *Habitual*: 'He always works on and on.'

Hoiting & Slobin (2001: 127) describe that continuative aspect in NGT is marked on the verb by "three repetitions of an elliptical modulation

[1] The following glossing conventions are used for the sign language examples:

SIGN	The gloss of one single sign
SIGN-SIGN	Multiple words form the gloss of one single sign
S-I-G-N	Fingerspelling
SIGN++	Reduplication of a sign
INDEX_X	Pointing sign with a linguistic function (pronoun); subscript numbers refer to locations in the signing space (1=chest of signer; 2=addressee; 3a/3b=right or left in signing space)
PU	Palms up
/_____/	Non-manual: oral or spoken component, the line indicates the scope

accompanied by pursed lips and a slight blowing gesture", and that habitual aspect "uses a slower elliptical modulation accompanied by gaze aversion, lax lips with protruding tongue, and slowly circling head movement". However, they also observe certain phonological constraints on these aspectual modulations: if a verb is lexically specified for internal movement or body contact, the elliptical movement is blocked. According to the authors, in these instances when aspect cannot be inflectionally expressed on the verb, NGT borrows an aspectual particle from spoken Dutch, namely *door* ('through').

In Dutch, the particle *door* can mark continuative and habitual aspect when it appears as a postposition or as a separate verb particle.[2] The aspectual meaning of *door* is a metaphorical extension of its locative sense of continued forward movement, and it indicates continuity of a process. This can be illustrated by the Dutch translations of (4), given in (5) (Hoiting & Slobin 2001: 128).

(5) a. Hij werkt **door**.
he works through
'He's going on working (at the moment).'

b. Hij werkt altijd **door**.
he works always through
'He always works on and on.'

In NGT, *door* ('through') is borrowed as the sign glossed as THROUGH: a static B-handshape (flat hand) facing the body on the non-dominant hand, crossed by a dynamic B-hand (the dominant hand), moving away from the body. Figure 2 shows a video still of the sign from the Corpus NGT (Crasborn et al. 2008; Crasborn & Zwitserlood 2008).

[2] Note that in spoken Dutch, other uses of *door* ('through') are attested as well: it can also be used as a locative preposition and as a locative satellite, as in *Hij reed **door** het park* ('He rode through the park') (Hoiting & Slobin 2001: 126). These uses are not attested at all in NGT according to Hoiting & Slobin (2001), because sentences like these are signed by means of a classifier moving through the signing space. Thus, there is no motivation for borrowing a locative term from Dutch.

Figure 2: The sign THROUGH

Hoiting & Slobin (2001) describe that THROUGH receives the same aspectual modulation as a verb whose phonological specification does not block aspectual inflection. Thus, a verb with internal movement and/or body contact cannot inflect for habitual or continuative aspect, but combines with THROUGH and aspectual modulation accompanies THROUGH rather than the verb. The resulting construction is described as a serial-verb construction with an uninflected main verb and a semi-auxiliary which is inflected for aspect. Furthermore, Hoiting & Slobin (2001) observe that THROUGH only occurs with a full lexical verb, and not by itself. It is limited to the position immediately after the verb, which indicates the integration of the borrowed element into the syntax of NGT. An example for the NGT verb TRY, which makes contact with the nose, is given in (6) (Pfau et al. 2012: 193).

(6) INDEX_{3a} TRY **THROUGH**++
'He tried continuously / he tried and tried and tried.'

However, Oomen (2016) calls into question this analysis of THROUGH by Hoiting & Slobin (2001). She points out that their analysis is exemplified by only two verbs (TRY and WORK), and that they do not discuss their methodology (other than that they used several informants from Groningen in the North East of the Netherlands); thus, it is unclear how they came to their analysis. Therefore, Oomen (2016) conducted a more systematic investigation into the marking of habitual and continuative aspect on verbs with and without phonological constraints (i.e., internal movement and/or body contact) in NGT.

The data analysed by Oomen (2016) were provided by a deaf native NGT signer, who completed a questionnaire designed to trigger responses with inflections for continuative and habitual aspect (TMA questionnaire). The results showed that continuative aspect was "consistently marked by means of a relatively slow reduplication of the verb's movement and a synchronous back-

and-forth movement of the head or body" (Oomen 2016: 43). Habitual aspect marking was only found for sentences situated in the past, and is characterised by reduplication and synchronous left-to-right head and/or body movement. Interestingly, THROUGH did not appear in the data. Verbs characterized by internal movement and/or body contact, such as TALK, MEOW, and TRY, were modulated for continuative and habitual aspect without THROUGH, that is, they were also reduplicated. These phonological properties were not constraining factors for the aspectual modulation.

Thus, Oomen (2016) did not find any instance of THROUGH in the data and offers as an explanation that because elliptical modulation did not occur, THROUGH did not occur either. Hoiting & Slobin (2001) claim that elliptical modulation is blocked by internal movement and body contact, but since this modulation was completely absent in Oomen's data, aspectual modification was not blocked, and thus there was no need to use THROUGH. Reduplication and head/body movement are not blocked by the phonological features internal movement and body contact. Remember that Hoiting & Slobin (2001) reported on participants from Groningen, whereas Oomen (2016) tested a participant from Amsterdam. Oomen (2016) thus suggests that the different ways in which habitual and continuative aspect are marked – elliptical modulation vs. head and body movements – might be due to regional variation. However, no other study has reported on grammatical differences between NGT variants, and usually the differences are assumed to be limited to the lexicon.

3 Research questions

Hoiting & Slobin (2001) observe that THROUGH marks continuative and habitual aspect on verbs with internal movement or body contact in NGT. In contrast, Oomen (2016) did not find any instance of THROUGH as an aspect marker. Thus, it remains unclear whether or not THROUGH is used as a free aspect marker in NGT, and under what conditions it is used. Therefore the current study investigated the following research questions:

(i) Is THROUGH used as an aspect marker in NGT?
(ii) If so, under what conditions can we observe the use of this aspect marker?

Based on previous studies, opposing predictions can be made. Based on the analysis by Hoiting & Slobin (2001), we can expect that THROUGH is indeed used as an aspect marker for habitual and continuative aspect in NGT. Furthermore, THROUGH is expected to occur only in combination with a full lexical verb that has either internal movement or body contact. Aspectual modulations are predicted to accompany THROUGH rather than the verb, and

THROUGH is expected to be limited to the position immediately after the verb. However, Oomen (2016) did not find any instance of THROUGH in the data. Thus, based on her study, an alternative prediction is that THROUGH is not used as an aspect marker at all. Furthermore, it would be expected that all verbs, including those with internal movement and/or body contact, can inflect for habitual and continuative aspect without THROUGH.

4 Method

In order to answer the research questions, the Corpus NGT (Crasborn et al. 2008; Crasborn & Zwitserlood 2008) was analysed for the use of THROUGH. Corpus research on this subject is interesting as well as necessary, because a large amount of (semi-)spontaneous as well as elicited NGT data can be accessed in order to determine whether or not THROUGH is attested in NGT. Furthermore, these data can help to determine the circumstances under which THROUGH appears. I will first elaborate on the Corpus NGT and will then explain how the data were selected and analysed.

4.1 Corpus NGT

The Corpus NGT (Crasborn et al. 2008; Crasborn & Zwitserlood 2008) consists of digital recordings of 92 deaf native NGT signers, containing over 70 hours of dialogue. The participants are aged between 17 and 84 years, and they are from different regions in the Netherlands. They performed several tasks such as retelling video clips and telling about an event, but they were also encouraged to talk about whatever they like. Thus, these data are partly elicited and partly (semi-)spontaneous. The video data are transcribed using the annotation tool ELAN (Crasborn & Sloetjes 2008) by NGT signers that are fluent in the language (usually native signers), following the Corpus NGT Annotation Conventions (Crasborn et al. 2015). The core tiers that are annotated are the gloss and translation tiers (in Dutch). Furthermore, for some clips, non-manual behaviours have been annotated as well.

4.2 Data selection and analysis

In order to examine whether or not THROUGH is used as an aspect marker in the Corpus NGT, I searched the corpus for *door* ('through') on the gloss tier, using the 'structured search multiple eaf' function in ELAN 5.0 (Crasborn & Sloetjes 2008). This resulted in 312 hits. In order to determine whether an instance of THROUGH was indeed an aspect markers, all hits were analysed individually. Note that I follow Oomen (2016) in adopting a more traditional definition of habituality, and thus do not include the additional notion of continuous action

like Hoiting & Slobin (2001) do, as Oomen (2016) showed that not only atelic, but also telic verbs can be modulated for habitual aspect in NGT.

To determine whether or not a sentence contained habitual or continuative aspect marking, both the direct linguistic context as well as the Dutch translation (if present) were taken into account. Excluded from further analysis were uses of THROUGH that did not mark habitual or continuative aspect. Furthermore, a sign that is different in both form and function from the sign analysed here is also glossed as DOOR in the corpus. However, this sign is glossed as DOOR-B, whereas the sign that is analysed here is glossed as DOOR-A. Also, sometimes DOOR was part of a complex gloss, such as DOOR-ELKAAR (lit. 'mixed up'). Both DOOR-B and the complex glosses were excluded from analysis as well. After excluding these hits, a quantitative analysis was carried out in order to determine how often THROUGH was used as an aspect marker. Sentences in which THROUGH was used as an aspect marker were further analysed for the two main features about which Hoiting & Slobin (2001) make predictions: the syntactic position of THROUGH and (phonological) properties of the main verb that THROUGH combines with.

5 Results and discussion

5.1 Quantitative analysis

Out of a total of 312 hits for DOOR on the glossing tier, 129 hits were DOOR-A. Of these, 29 were analysed as an aspect marker: eight as marking habitual aspect and 21 as marking continuative aspect.[3] Thus, in the corpus, THROUGH is indeed used as an aspect marker, mostly to mark continuative aspect.

Firstly, the syntactic position of THROUGH was analysed. Three sentential positions were distinguished: THROUGH before the main verb (pre-verbal), after the main verb (post-verbal), and in between two repetitions of the main verb (inter-verbal). In some instances, the verb that was modulated by THROUGH was present in the direct linguistic context (i.e., in the preceding or following sentences) but not in the same sentence as THROUGH. These cases were labelled 'elliptical'. The quantitative results are shown in Table 1, and examples from the corpus for each type of sentence are given in (7). Note that the total number in Table 1 is 32 sentences, but that only 29 sentences contain THROUGH as an aspect marker in one of the syntactic positions. In the remaining three sentences, THROUGH expresses continuity, but it does not modify another verb. In these

[3] In the remaining hits, THROUGH was most often used to indicate a causation. This meaning of *door* is also attested in spoken Dutch. Additionally, in five hits, THROUGH also seemed to indicate some sense of continuity, but it was not entirely clear whether it was used as an aspect marker. They were therefore excluded from analysis.

sentences, THROUGH was labelled a 'main verb', and they will be discussed in Section 5.4.

Table 1: The syntactic position of THROUGH

Position of THROUGH	**Number**
Pre-verbal	10
Post-verbal	14
Inter-verbal	3
Elliptical	2
Main verb	3
Total:	32

(7) a. *pre-verbal:*
CAT **THROUGH** CLIMB
'The cat continued climbing.'

b. *post-verbal:*
$INDEX_{3a}$ TALK **THROUGH**
'She continued talking.'

c. *inter-verbal:*
$INDEX_{3a}$ TALK **THROUGH** TALK
'He continued talking / He talked and talked and talked.'

d. *elliptical:*
$INDEX_{3a}$ **THROUGH**
'He continued (talking).'

Second, the verbs with which the aspect marker THROUGH combines were analysed. Table 2 shows which verbs THROUGH combined with and in brackets how many instances of each combination were found. Furthermore, in the table a distinction is made between verbs with and without constraining phonological features (internal movement and/or body contact). Note that sometimes THROUGH combined with classifier predicates, and these were distinguished as a separate category.

Table 2: The verbs combined with aspect marker THROUGH

Verbs combined with aspect marker THROUGH	**Number**
With internal movement and/or body contact: FINGERSPELL (1); TALK (5); SIGN (1); DISCUSS (1); PRESERVE (1); TACKLE (1); BRICKLAYING (1); DRINK (1); CLIMB (1); GASP (1); RUN (1); GRAZE (1); DEVELOP (2); REMAIN (4)	22
Without internal movement and/or body contact: EXIST (1); SUN(-SHINE) (1); TRY-YOUR-BEST (1); RETAIN (1)	4
Classifier predicate[4]	3
Total:	29

In the next sections, I will present further analysis of the data and discuss in detail how these results relate to the findings reported in the previous studies.

5.2 Syntactic analysis

5.2.1 Syntactic position

As was mentioned in Section 2, Hoiting & Slobin (2001: 129) observe that "syntactically, THROUGH is limited to the position immediately following the verb". The corpus data clearly contradict this syntactic constraint. While the verb–THROUGH pattern is indeed observed in the Corpus NGT, it only characterises 14 out of 29 sentences. One example has already been given in (7b) and another one is shown in (8).

(8) INDEX_{3a} SUN-SHINE INDEX_{3a} SUN-SHINE **THROUGH**
'The sun was constantly shining.'

In ten of the remaining sentences, THROUGH appeared in pre-verbal position. This was shown in (7a), and another example is given in (9).

(9) INDEX_{1} **THROUGH** DRINK
'I continued drinking.'

The corpus data thus indicate that THROUGH might not be restricted to a single syntactic position after all. Whether other factors are at play that cause THROUGH

[4] Classifiers were analysed as predicates here, but I will not go into detail on classifiers; in the following analysis, they are included in the same way as non-classifier verbs were.

to sometimes appear before the main verb, cannot be concluded from this limited number of sentences. One possible explanation is that spoken Dutch influenced NGT, because this pre-verbal position is also attested in spoken Dutch. The position of *door* in Dutch is determined by the finiteness of the main verb. It follows finite verbs (10a), but it is prefixed to non-finite verbs (10b) (Hoiting & Slobin 2001: 129).

(10) a. *door* following a finite verb:
Hij werkte **door**.
he worked through
'He worked through.'

b. *door* prefixed to a non-finite verb:
Hij heeft **door**gewerkt.
he has through-worked
'He has worked through.'

However, as Hoiting & Slobin (2001) point out, finiteness of verb forms plays no role in NGT syntax, and it is thus unclear in what way the spoken Dutch order could have influenced NGT. An alternative explanation is that the use of different syntactic positions might indicate that THROUGH is not as integrated in the NGT syntax as was suggested by Hoiting & Slobin (2001: 129). According to them, "the use of a single syntactic position for all functions indicates the integration of the borrowed element into the syntax of the borrowing language", but this is not the case in the corpus data. Note that the exact word order does not seem to differ depending on the main verb that THROUGH is combined with. For example, in the corpus, both TALK THROUGH and THROUGH TALK can be found. Future research should investigate why THROUGH sometimes precedes and sometimes follows the verb.

Furthermore, in three instances, the main verb is doubled. In these cases, THROUGH is placed in between the two repetitions of the main verb, as was shown in (7c). Again, this does not seem to be specific for a verb, as it is also found with TALK alongside the pre- and post-verbal positions: TALK THROUGH TALK. Note that doubling is not uncommon, as it also occurs elsewhere in NGT. One example is subject pronoun copy, which entails that the subject is repeated at the end of a sentence by means of an index sign (Pfau & Bos 2016). Future research will have to investigate doubling in aspect marking.[5]

[5] Note that the numbers in this section add up to 27 sentences, not 29, because the two elliptical sentences are not included. These sentences do not contain a main verb and are therefore not informative with respect to the position of THROUGH vis-à-vis the main verb.

5.2.2 Intervening elements

Hoiting & Slobin (2001) further describe that THROUGH always *immediately* follows the main verb. This was not always the case in the corpus. In both sentences with THROUGH in post- and pre-verbal position, other signs sometimes intervene between THROUGH and the verb (five sentences). In two of these sentences, this iss due to the combination of the signs glossed in Dutch as GEWOON DOOR. The sign GEWOON (lit. 'usual', 'common') intervenes between the main verb and THROUGH, and it might add the meaning that something remains normal or the way it was before. This use of *gewoon* can also be found in spoken Dutch. An NGT example is shown in (11).

(11) IF DEAF EDUCATION REMAIN **USUAL THROUGH** PU QUESTION[6]
'Whether deaf education will continue, is still unclear.'

In the other three instances, an INDEX intervenes between the main verb and THROUGH, as in (12). Across sign languages, it is not uncommon for a pronoun (INDEX sign) to cliticize to the preceding or following sign. In citation form, the INDEX is signed with an extended index finger (1-hand), but under cliticization, the pronoun may assimilate to the handshape of the host (Sandler 1999). This seems to be the case in the example in (12): the INDEX following GRAZE is not signed with the 1-handshape, but rather with extended index and middle finger (H-hand). This is most likely because it is cliticized to GRAZE, in which all fingers are selected. Thus, these sentences are not necessarily in contradiction to Hoiting & Slobin (2001), as the intervening element is actually a clitic to the verb.

(12) BOY HEAR SHEEP GRAZE INDEX$_{3a}$ **THROUGH**
'The boy always heard the sheep graze.'

Taken together, in most cases, THROUGH and the main verb immediately follow each other. Future research will have to show which elements can intervene between these two, but in our data, the intervening element was either the adverbial GEWOON or an INDEX cliticized to the verb. However, the elliptical sentences form an exception, because in these sentences, THROUGH and the main verb are in separate clauses. The main verb was omitted from the sentence but was evident in the immediate linguistic context, as in (13).

[6] PU (palm-up) in this sentence is not used to indicate a clause boundary (which is one function of PU), but rather to express uncertainty.

(13) INDEX_{3a} STILL INDEX_{3a} TALK THROUGH TALK. INDEX_{1} DEAF INDEX_{1}. INDEX_{3a} **THROUGH**
'He continued talking. I said: I am deaf! But he continued (talking).'

This example shows two instances of THROUGH. While the first is inter-verbal, the second (in bold) also modifies the verb TALK, but it does not follow or precede that verb immediately. In fact, the verb is left out the second time, despite the fact that an entire sentence intervenes between the main verb and THROUGH. Hoiting & Slobin (2001) do not mention such elliptical constructions. Because only two instances were found in the corpus, we cannot offer any conclusions about why and when these elliptical constructions occur, and future research could focus on this. Yet, the examples do at least show that sometimes THROUGH appears in a sentence without a main verb. I will further elaborate on this in Section 5.4.

5.3 Analysis of the main verb combined with THROUGH

The verbs that combined with THROUGH were also analysed. First of all, the findings here indicate that THROUGH may also combine with verbs that are not specified for one of the phonological features which, according to Hoiting & Slobin (2001), block aspectual inflection: in four sentences, the verb is neither specified for internal movement nor body contact, but still appears with THROUGH (see Table 1). For example, the NGT sign SUN(-SHINE)[7] does not involve body contact or internal movement, as is shown in Figure 3. Yet, this verb itself is not modulated but combines with THROUGH, as was exemplified in (8). This contradicts the observation by Hoiting & Slobin (2001) that THROUGH only combines with verbs that are specified for one of the constraining features. Note, however, that THROUGH did appear with verbs that display one of these features in the majority of the sentences (22 out of 29). An illustration of the constrained verb TALK (internal movement) that combined with THROUGH, as exemplified in (7) and (13), is given in Figure 4. What exactly triggers the use of THROUGH is a question for further research.

[7] In the Corpus NGT, this sign was glossed as ZON ('sun'). However, we can deduce from the context that here the sign is a non-verbal predicate and might as well have been glossed as SUN-SHINE.

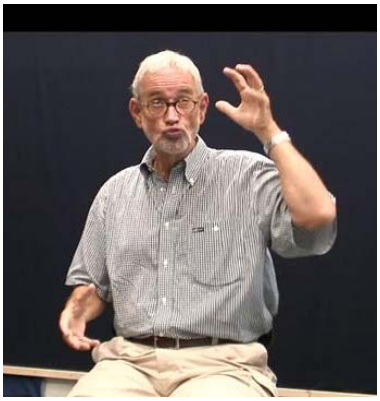

Figure 3: NGT SUN(-SHINE)

Figure 4: NGT TALK

Oomen (2016) also observed that verbs with the constraining features can be modulated for aspect (i.e., be reduplicated), and suggests that she did not find any instance of THROUGH because internal movement and body contact actually do not block reduplication. The data here suggest that her analysis and the use of THROUGH are not necessarily incompatible. Interestingly, in seven sentences, the verb does not only combine with THROUGH, but is reduplicated as well.[8] We are thus dealing with double marking of aspect. The reduplication also appeared on verbs with one of the two constraining features. This is shown in (14): FINGERSPELL has internal movement, yet is reduplicated to mark aspect.

(14) FINGERSPELL++ **THROUGH**
'… fingerspell continuously.'

Thus, the data suggest that aspect can be marked twice in one sentence. In (14), we find both the free marker observed by Hoiting & Slobin (2001) as well as the reduplication of the verb observed by Oomen (2016). This occurs with verbs with and without body contact or internal movement. Note that double marking is not uncommon in sign languages. For example, in some sign languages (e.g. Indo-Pakistani, Argentine, and Taiwanese Sign Languages), an agreeing auxiliary may combine with a main verb that is also marked for agreement (Steinbach & Pfau 2007). This is similar to what we observe here: Hoiting & Slobin (2001) describe THROUGH as a semi-auxiliary that follows an uninflected main verb, but in sentences like (14), the main verb is inflected as well. What motivates double marking of aspect should be investigated in future research.

Remember that Oomen (2016) observes that the verb is also accompanied by non-manuals when inflected for aspect, including a back-and-forth head and

[8] Due to time and space limits, reduplication of THROUGH is not analysed here. Preliminary observations show that THROUGH usually is reduplicated when marking aspect, but that this is not always the case.

body movement for continuative aspect and a left-to-right head and body movement for habitual aspect. Hoiting & Slobin (2001) also observe non-manuals: pursed lips and a slight blowing gesture for continuative aspect, and gaze aversion, lax lips with protruding tongue, and slowly circling head movement for habitual aspect. Non-manuals are not further analysed here, but in the corpus data, none of the non-manual markers identified in previous studies are used consistently. The sentences often appeared with a mouthing of the spoken Dutch word for the lexical verb and/or of *door*, but non-manuals were not always present. An illustrative example is given in (15), in which the spoken Dutch lexical verb *praten* ('talk') is mouthed twice, and *door* is mouthed once. The repetition of the mouthing *praten* might be a further indication of the continuity of the action, but more research into non-manuals is necessary.

(15) /praten praten/ /door/
TALK THROUGH
'… continued talking.'

5.4 THROUGH as a verb

Hoiting & Slobin (2001: 129) observe that "THROUGH does not have all the characteristics of a verb. It only occurs in combination with a full lexical verb and does not occur by itself. […] The semantic function of THROUGH is limited to the expression of certain nuances of aspect". As was mentioned previously, in the corpus data, THROUGH sometimes occurred in a sentence without main verb, but the elided main verb could be identified in the direct linguistic context. These elliptical constructions are still partly in line with Hoiting & Slobin's analysis, because THROUGH is used to mark the aspect of another verb and does not occur completely by itself. However, the corpus data featured another type of sentences in which THROUGH occurs without a main verb, and these sentences might actually contradict their analysis: in at least three sentences, THROUGH does not modulate a main verb, and it is also not the case that the main verb is elided and can be identified from the immediate linguistic context. That is, THROUGH appears completely by itself. It thus seems that in these instances, THROUGH does not function as an aspect marker but as a lexical verb with the meaning 'to continue'. These sentences are given in (16).

(16) a. HEAR BEAUTIFUL CULTURE **THROUGH** PU
'It's a beautiful culture to continue.'

b. INDEX$_{3a}$ LIKE INDEX$_{3a}$ **THROUGH** DEAF WORLD DISAPPEAR
'If it continues like this, the deaf world will disappear.'

c. STILL **THROUGH** TWENTY PU
'Will this continue for twenty minutes?'

The examples in (16) contradict the Hoiting & Slobin's claim that THROUGH is a grammaticalized element without properties of a verb. Hoiting & Slobin (2001) do not mention constructions of this type, and we may therefore ask why THROUGH seems to appear as a verb.

One possible explanation is that THROUGH is going through a process of degrammaticalization, and that it is developing into a lexical verb. Degrammaticalization can be defined as "a composite change whereby a gram in a specific context gains in autonomy or substance on more than one linguistic level (semantics, morphology, syntax or phonology)" (Norde 2009: 120). This appears to be the case for THROUGH, as it gains both in syntactic autonomy and semantic substance. Syntactically, it no longer has to combine with a lexical verb and can appear by itself. The semantic function is no longer limited to the expression of aspectual nuances. It seems that this could be categorized under what Norde (2009) calls *degrammation*, a subtype of degrammaticalization which constitutes a shift from a minor word class to a major word class and from grammatical to lexical content. Elliptical sentences, as in (13), might constitute an intermediate stage in this degrammaticalization process, in which THROUGH is moving towards an autonomic position in the sentence.

However, an explanation along these lines should be taken with caution, as degrammaticalization is known to be a very infrequent phenomenon (Norde 2009). Yet, instances of degrammaticalization have been noted before (e.g. Ramat 1992). The corpus data included only three instances in which THROUGH appears to function as main verb, but the fact that these instances as well as the elliptical sentences are attested, is reason for future research into the possible degrammaticalization of THROUGH. Note, however, that there is an alternative hypothesis according to which the process is actually the reverse: THROUGH was a main verb at first and has now become a grammatical marker through grammaticalization. In principle, such an alternative explanation is also possible, but seems less plausible because *door* does not function as a main verb in Dutch. Since THROUGH is assumed to be borrowed from Dutch *door*, it seems unlikely that it was borrowed as a main verb.

5.5 Differences between corpus data and elicited data

The findings reported here are quite different from what was found in earlier studies on aspect marking in NGT. However, it remains unclear why this could

be the case. A possible explanation could be that in this study, naturalistic corpus data were analysed instead of elicited data.

In our data, the distribution of THROUGH is less restricted than was suggested by Hoiting & Slobin (2001), as it appears in varying syntactic positions and in combination with a wider range of verbs. This variation is likely due to the fact that (semi-)spontaneous corpus data were analysed. Analysis of this type of data shows more variation than analysis of elicited data, as corpus data come closer to naturalistic language use (as has previously been shown by, for example, de Beuzeville et al. (2009) for verb agreement in Australian Sign Language and by Oomen & Pfau (2017) for negation in NGT). This could explain why the results in the present study show more variation in the use of THROUGH than was reported by Hoiting & Slobin (2001), although we should keep in mind that their exact methodology is not discussed.

Furthermore, non-manual markers do not seem to be used consistently in the corpus data, contrary to what was found by Hoiting & Slobin (2001) and Oomen (2016). Again, a possible explanation lies in the difference between naturalistic and elicited data. It has previously been shown that non-manuals are not used as consistently in spontaneous signing as is suggested by elicited data (e.g. Herrmann & Steinbach (2012) for non-manuals in role shift in German Sign Language). Finally, we can speculate that signers might be more reluctant to use signs borrowed from spoken language in formal elicitation. Since THROUGH is borrowed from spoken Dutch, it might be used in spontaneous, but not in elicited signing. This could explain why the aspectual marker THROUGH surfaces in the corpus data but not in the data elicited by Oomen (2016).

6 Conclusion

This study investigated the use of THROUGH as a free aspect marker in NGT. Analysis of the Corpus NGT showed that THROUGH marks both habitual and continuative aspect. It appears in varying syntactic positions, and it combines with with a broad range of verbs. This analysis challenges previous research by Hoiting & Slobin (2001), who observed that THROUGH is restricted to the syntactic position immediately after phonologically constrained verbs. It further challenges the finding by Oomen (2016), who did not observe THROUGH as an aspect marker in her data at all. The analysis presented here shows that previous observations are certainly not the whole story and that the use and distribution of the aspectual particle THROUGH might be less restricted than was suggested in earlier studies. Future research should focus on both the constraints on the syntactic position of THROUGH as well as the verbs it can combine with.

Finally, it was observed that THROUGH is not only used as an aspectual marker, but also as a full lexical verb. This use was not attested in previous

investigations, and a possible explanation is that THROUGH is undergoing degrammaticalization. However, this is only a tentative conclusion which certainly requires further investigation. The observations made here are based on a limited number of sentences, and no definitive conclusions can be drawn yet. Research on the use of THROUGH in NGT based on more data is necessary.

References

Bergman, B. & Ö. Dahl. 1994. Ideophones in sign language? The place of reduplication in the tense-aspect system of Swedish Sign Language. In C. Bache, H. Basboll & C.E. Lindberg (eds.), *Tense, Aspect and Action: Empirical and Theoretical Contributions to Language Typology*. Berlin: De Gruyter Mouton, 397–422.

de Beuzeville, L., T. Johnston & A. Schembri. 2009. The use of space with indicating verbs in Auslan: A corpus-based investigation. *Sign Language & Linguistics* 12(1): 53–82.

Brennan, M. 1983. Marking time in British Sign Language. In J.G. Kyle & B. Woll (eds.), *Language in Sign: An International Perspective on Sign Language*. London: Croom Helm, 10–31.

Cole, P. 1982. *Imbabura Quechua*. Amsterdam: North-Holland Publishing Company.

Comrie, B. 1976. *Aspect: An Introduction to the Study of Verbal Aspect and Related Problems*. Cambridge: Cambridge University Press.

Crasborn, O. & H. Sloetjes. 2008. Enhanced ELAN functionality for sign language corpora. In *Construction and Exploitation of Sign Language Corpora. 3rd Workshop on the Representation and Processing of Sign Languages.* Paris: ELDA, 39–43.

Crasborn, O., I. Zwitserlood & J. Ros. 2008. *The Corpus NGT. A Digital Open Access Corpus of Movies and Annotations of Sign Language of the Netherlands*. Nijmegen: Centre for Language Studies, Radboud University Nijmegen.

Crasborn, O. & I. Zwitserlood. 2008. The Corpus NGT: An online corpus for professionals and laymen. In *Construction and Exploitation of Sign Language Corpora. 3rd Workshop on the Representation and Processing of Sign Languages.* Paris: ELDA, 44–49.

Crasborn, O., R. Bank, I. Zwitserlood, E. van der Kooij, A. de Meijer & A. Sáfár. 2015. *Annotation Conventions for the Corpus NGT*. Nijmegen: Centre for Language Studies & Department of Linguistics, Radboud University Nijmegen.

Herrmann, A. & M. Steinbach. 2012. Quotation in sign languages: A visible context shift. In I. van Alphen & I. Buchstaller (eds.), *Quotatives: Cross-linguistic and Cross-disciplinary Perspectives*. Amsterdam: John Benjamins, 203–228.

Hoiting, N. & D.I. Slobin. 2001. Typological and modality constraints on borrowing: Examples from the Sign Language of the Netherlands. In D. Brentari (ed.), *Foreign Vocabulary in Sign Languages: A Cross-linguistic Investigation of Word Formation*. Mahwah, NJ: Lawrence Erlbaum, 121–138.

Klima, E.S. & U. Bellugi. 1979. *The Signs of Language*. Cambridge: Harvard University Press.

Meir, I. 1999. A perfect marker in Israeli Sign Language. *Sign Language & Linguistics* 2(1): 43–62.

Norde, M. 2009. *Degrammaticalization*. Oxford: Oxford University Press.

Oomen, M. 2016. The marking of two aspectual distinctions in Sign Language of the Netherlands (NGT). *Linguistics in Amsterdam* 9(2): 30–55.

Oomen, M. & R. Pfau. 2017. Signing NOT (or not): A typological perspective on standard negation in Sign Language of the Netherlands. *Linguistic Typology* 21(1): 1–51.

Pfau, R. & H. Bos. 2016. Syntax: simple sentences. In A. Baker, B. van den Bogaerde, R. Pfau & T. Schermer (eds.), *The Linguistics of Sign Languages: An Introduction*. Amsterdam: John Benjamins, 117–147.

Pfau, R., M. Steinbach & B. Woll. 2012. Tense, aspect, and modality. In R. Pfau, M. Steinbach & B. Woll (eds.), *Sign Language: An International Handbook (HSK – Handbooks of Linguistics and Communication Science)*. Berlin: De Gruyter Mouton, 186–204.

Ramat, P. 1992. Thoughts on degrammaticalization. *Linguistics* 30(3): 549–560.

Rathmann, C. 2005. *Event Structure in American Sign Language*. PhD dissertation, University of Texas at Austin.

Sandler, W. 1999. Cliticization and prosodic words in a sign language. In T.A. Hall & U. Kleinhenz (eds.), *Studies on the Phonological Word*. Amsterdam: John Benjamins, 223–255.

Smith, C.S. 1997. *The Parameter of Aspect (2nd edition)*. Dordrecht: Kluwer.

Steinbach, M. & R. Pfau. 2007. Grammaticalization of auxiliaries in sign languages. In P.M. Perniss, R. Pfau & M. Steinbach (eds.), *Visible Variation: Comparative Studies on Sign Language Structure*. Berlin: Mouton de Gruyter, 303–340.

Sutton-Spence, R. & B. Woll. 1999. *The Linguistics of British Sign Language: An Introduction*. Cambridge: Cambridge University Press.

Vendler, Z. 1967. Linguistics in philosophy. *The Journal of Philosophy* 64(21): 704–713.

Zeshan, U. 2003. Aspects of Türk İşaret Dili (Turkish Sign Language). *Sign Language & Linguistics* 6(1): 43–75.

Zucchi, S. 2009. Along the time line: Tense and time adverbs in Italian Sign Language. *Natural Language Semantics* 17(2): 99–139.

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