# A PERSON with many personalities

*Grammaticalization of the sign PERSON in Sign Language of the Netherlands*

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## Abstract

Grammaticalization of the lexical sign PERSON has been described in detail for several sign languages, including German and Catalan Sign Language. This study investigates which grammatical functions the sign PERSON has acquired in Sign Language of the Netherlands. Using the Corpus NGT, sentences containing the sign PERSON were analyzed. The results show that the sign PERSON acquired multiple grammatical functions, for instance a localized form of PERSON and an indexing function. Several of the discovered forms were previously undescribed in the literature. Therefore, this study contributes to the typology of sign language grammaticalization.

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# 1. Introduction

Languages are like living organisms; they are everchanging. In a matter of centuries or even decades, a language can evolve, resulting in phonological, lexical, and grammatical structures that contrast with their predecessors. This property of languages is universal and is therefore true for spoken languages as well as sign languages. One particular type of diachronic change, affecting the lexicon, is grammaticalization. This process, which is also the focus of this thesis, involves the development of a lexical element into a grammatical element, or the development of a grammatical element into another grammatical element. In the past, many different examples of grammaticalization have been described for both spoken languages (e.g. Kuteva et al., 2019) and sign languages (e.g. Pfau & Steinbach, 2006).

The selection of lexical items that are subject to grammaticalization is not fully arbitrary. Kuteva et al. (2019) note that generic nouns, like 'man', 'person' or 'thing' regularly undergo grammaticalization. As for the term 'person', several pathways of grammaticalization have been described. Not only in spoken languages, but also in sign languages, 'person' is a productive source for a wide variety of grammatical elements. For some sign languages, like German Sign Language (*Deutsche Gebärdensprache*, DGS) and Catalan Sign Language (*Llengua de Signes Catalana*, LSC), complex pathways have been plotted out describing how 'person' developed into grammatical elements, which developed further into other grammatical elements (Pfau & Steinbach, 2013). However, such an overview is still missing for Sign Language of the Netherlands (*Nederlandse Gebarentaal*, NGT). This study aims to fill that gap in the typology of grammaticalization. Therefore, my research question is: *Which grammatical functions has the lexical sign* PERSON *acquired in Sign Language of the Netherlands?* This question will be answered by conducting a corpus search and analyzing the relevant sentences.

The structure of this thesis is the following: in Section 2, the key concepts of localization in signing space will be discussed, as well as grammaticalization in general and more specifically, regarding the term 'person'. Section 3 is dedicated to the methodology of this research, from a theoretical and a practical perspective. In Section 4, the results of the corpus search and analysis will be presented and complemented by examples. Finally, Section 5 is concerned with the interpretation of the results and the conclusion of this study.

## 2. Theoretical background

In order to understand how the sign PERSON has grammaticalized in NGT, some key concepts need to be introduced. First, I will introduce a couple of strategies of localization used in sign languages (Section 2.1). Second, the field of grammaticalization will be discussed, with special attention to grammaticalization of the noun 'person' (Section 2.2). After the relevant literature has been presented, I will explain how this study fills a gap in the literature and what results I expect to find (Section 2.3).

### 2.1 Localization in signing space

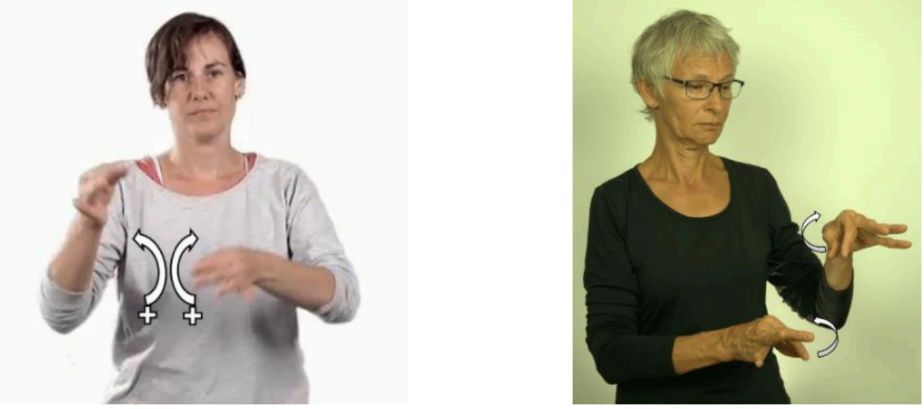
Sign languages make use of the visual-spatial modality and because of that, they can express certain grammatical structures differently from spoken languages, which use the oral-auditory modality. One way in which sign languages exploit the affordances of the modality is by using indexing strategies to localize discourse referents in the signing space (Perniss, 2012, p. 413f). When a referent is physically present (which is by default true for first and second person referents), one can simply point at the present referent when referring to them. However, when talking about referents not physically present, many sign languages allow for this referent to be assigned an arbitrary locus in the signing space. This is commonly achieved by combining the referent with an indexing sign pointing at the intended locus. Later, when referring back to that referent, one can simply point at the locus where the referent was localized previously. NGT is one of the sign languages that employ this localization strategy (Bos, 1993), as is shown in (1) (see Appendix A for sign language glossing conventions). (1a) contains the noun phrase $\text{INDEX}_2$ COUSIN which is localized by means of the sign $\text{INDEX}_{3a}$. In (1b), the signer refers back to 'your cousin' by using $\text{INDEX}_{3a}$ again; in this case, $\text{INDEX}_{3a}$ thus functions as a pronoun.

NGT (adapted from Pfau & Bos, 2016, p. 140)

(1) a. YESTERDAY $\text{INDEX}_1$ [$\text{INDEX}_2$ COUSIN **$\text{INDEX}_{3a}$**] SEE.
'Yesterday I saw your cousin.'

b. NEXT YEAR **$\text{INDEX}_{3a}$** WORLD^TRIP GO.
'Next year, he will go on a trip around the world.'

Another strategy for localization that can be found in NGT, among other sign languages, is the localization of nouns (Klomp, 2021, p. 240). Klomp describes that nouns which are produced on the weak hand or in neutral space allow for a modification of their location feature. This strategy is used when the signer wants to show the location of the localized entity in relation to the signer. However, the location can also be arbitrary. Figure 1 shows the difference for the noun PLANT between the plain form (a) and a localized form (b).



(a) (b)

**Figure 1**. The sign PLANT in NGT in its plain form (a) and localized form (b) (both images are from Klomp, 2021, p. 241; Figure 1a appeared originally without the arrows on https://signbank.cls.ru.nl/dictionary/gloss/1484.html).

## 2.2 Grammaticalization

Grammaticalization is a process defined by Kuryłowicz (1965, p. 69) as "the increase of the range of a morpheme advancing from a lexical to a grammatical or from a less grammatical to a more grammatical status". Ideas about grammatical elements being derived from lexical ones are as old as the eighteenth century (Heine, 2003, p. 575). Different occurrences of grammaticalization often share certain properties and follow common pathways (Section 2.2.1). Interestingly, many of the identified pathways have shown to exist for both spoken and sign language; in other words, they are modality-independent. A lexical element that has been used as a source for grammaticalization many times is the term 'person', both in spoken languages (Section 2.2.2) and sign languages (Section 2.2.3).

### *2.2.1 Properties of grammaticalization*

Previous literature on grammaticalization has identified three main properties of grammaticalization, also described as 'mechanisms' (Heine & Kuteva, 2002, p. 378). These are:

(i) Desemanticization
(ii) Decategorialization
(iii) Erosion

I will use an example of grammaticalization in English to explain these terms. The suffix *-ly* in Modern English, used to form adjectives from nouns, originated from the Old English noun *lic* 'body' (Joseph, 2001, p. 164). This grammaticalization process from noun to grammatical affix involved the three properties listed above. Desemanticization refers to the

loss of the original meaning of the element, often in exchange for a more abstract grammatical meaning (Heine, 2003, p. 579). In a word like *manly* one might argue that the affix can still be interpreted as 'having the body of a man', but this argument does not hold for words like *friendly*, which cannot be interpreted as 'having the body of a friend'. Thus, the meaning of *-ly* extended to a more abstract meaning, namely 'having the characteristics of X'.

Decategorialization is the loss of morphosyntactic properties of the source element (Heine & Kuteva, 2002, p. 379). The Old English word *lic* was a noun and a free morpheme. However, *lic* lost these properties and nowadays, *-ly* functions only as an adjectival suffix. The role that this element has in a sentence has shifted drastically over time. This is what decategorialization is about.

Lastly, erosion or "phonetic reduction" is the loss of phonetic or phonological information that often accompanies the grammaticalization process of an element, thereby becoming detached from the source element in form (Heine, 2003, p. 579). Going back to our example, the word *lic* has lost its final consonant during its journey of becoming *-ly*. In other words, *lic* has phonetically eroded.

Another often emphasized characteristic of grammaticalization is its unidirectionality, i.e. lexical elements commonly turn into grammatical elements, but not the other way around. None of the proposed counterexamples have been convincing (Lehmann, 2015, p. 21). Therefore, if one finds one element that has both a lexical and a grammatical meaning, one can assume with some degree of certainty that the grammatical meaning is derived and the lexical meaning is the original one, instead of the reverse.

Even though most of the original research on grammaticalization has focused on spoken languages, more recent findings have shown that grammaticalization is present in both the oral-auditory and visual-spatial modality (Meir, 2003, p. 110). Interestingly, some common patterns of grammaticalization are shared between spoken and sign languages. For example, one way of forming the future tense in English is by using the verb 'to go' (e.g. "I am going to sleep"). This use of 'to go' is a grammaticalized form of the lexical verb 'to go'. The same process of grammaticalizing 'to go' into a future tense marker took place in American Sign Language (ASL), which features a future tense marker that is derived from an old ASL sign meaning 'to go' (Janzen & Shaffer, 2002, p. 204). In NGT, the sign GO can also be used to mark future tense (Couvee & Pfau, 2018, p. 14).[1] This shows that some of the grammaticalization pathways that have been identified for spoken languages are modality-independent, i.e. they are applicable to both spoken and sign languages.

[1] More examples of grammaticalization pathways that are present in both spoken and sign languages can be found in Pfau & Steinbach (2006, p. 14f).

However, some aspects of grammaticalization in sign languages seem to deviate from spoken languages. For instance, Meir (2003) reports on a case-marked pronoun in Israeli Sign Language (ISL), which is a grammaticalization of the sign PERSON. This finding seems to be unique, since case markers in spoken languages generally have their origin in spatial adpositions. Even though spatial adpositions are rare in sign languages, the ISL lexicon does contain a couple. However, Meir suggests that the iconic aspect of adpositions prevents these adpositions from grammaticalizing into a case marker. One of the main properties of grammaticalization that I introduced earlier is 'desemanticization'. In spoken languages, adpositions are arbitrary and therefore, losing semantic content during their grammaticalization process is not an issue. In contrast, adpositions in sign languages are almost always iconic, i.e. the form of the adposition shows the spatial relation that is intended. This makes it difficult for sign language adpositions to lose the spatial meaning when developing into a case marker, since it is the form of the adposition that carries some of the spatial meaning. This specific example shows that modality can have an impact on the way that grammaticalization works in different languages.

*2.2.2 Grammaticalization of 'person' in spoken languages*

The noun 'person' has proven to be a common source of grammaticalization. Targets of grammaticalization processes involving 'person' or its plural form 'people' include indefinite pronouns, impersonal pronouns and plural pronouns of different kinds. This phenomenon is not restricted to a specific group of languages, as it can be found in languages that are geographically and genealogically distant.

One of the most common targets of grammaticalization of 'person' is an indefinite pronoun. Example (2) features the Albanian indefinite pronoun *njeri* ('someone'), which is an extension of the original meaning of *njeri* ('person').

Albanian (Stolz, 1991a, p. 12, as cited in Kuteva et al., 2019, p. 328)

(2) *S'* *pa-shë* ***njeri****.*
NEG see-AOR.1SG someone.ACC
'I haven't seen anybody.'

The same grammaticalization process has been attested for Portuguese and Bulu (Cameroon), among others (Kuteva et al., 2019, pp. 328–329). Haspelmath (1997, p. 182) argues that it is sometimes difficult to disentangle an indefinite pronoun form and a noun. For example, the sentences 'I know someone from Copenhagen' and 'I know a person from Copenhagen' both have the same meaning, but the former sentence uses an indefinite pronoun and the latter uses the noun 'person'.

A grammaticalization process that is probably related to indefinite pronouns is that of impersonal pronouns (Kuteva et al., 2019, p. 329). The noun *wó* in Baka (Cameroon) means ‘person’ or ‘man’ and has given rise to an impersonal pronoun of the same form, as shown in (3). A similar process in French resulted in the impersonal pronoun *on*, which has its roots in Latin *homo* (‘person/man’) (Heine & Song, 2011, p. 616).

Baka (Kuteva et al., 2019, p. 329)

(3) ***Wó*** *ndé* *a* *ye* *pɔ̀kì* *à* *mo-nda*
man without INF love honey LOC door-house
‘One does not like the kind of honey that sticks on the house door.’

A third person pronoun is another grammatical element which sometimes finds its origin in terms for ‘person’. An example of this comes from Khmer (Cambodia), where the word *kee:* (‘person’) has not only developed an extra function as indefinite pronoun, but also functions as a third person pronoun of neutral social status (Heine & Song, 2011, p. 598).

Another pronoun form that can be the result of grammaticalization of ‘person’, or more often ‘people’, is the first person plural pronoun form. This can be found in Kono (Sierra Leone), where the noun *mɔ̀ɔ̀* (‘man/person/people’) has developed into the phonologically eroded form *mɔ̀’*, which functions as a first person plural inclusive pronoun (Kuteva et al., 2019, p. 330). Example (4) contains the first person exclusive pronoun *dju* as found in the N1 dialect of !Xun (Angola). Again, the source of this pronoun is the !Xun word for ‘person’ or ‘people’ which has the same form.

!Xun, N1 dialect (Heine & König, 2015, as cited in Kuteva et al. 2019, p. 330)

(4) ***dju****-tca* *Dúmbà* *gè.*
1PL.EXCL-DU Dumba stay
‘I am staying with Dumba.’ (lit.: ‘We [two] and Dumba stay.’)

As I mentioned before, the French impersonal pronoun *on* developed from Latin *homo* meaning ‘person’ or ‘man’. However, in spoken French, *on* is also used as a first person plural pronoun (Heine & Song, 2011, p. 616). This process in French follows a pathway that has been described for multiple languages, whereby a term for ‘person’ or ‘people’ develops first into an indefinite or impersonal pronoun, after which it becomes a first person plural pronoun (Giacalone Ramat & Sansò, 2007, p. 106; Heine & Song, 2011, p. 617).

‘People’, the plural form of ‘person’, has also given rise to a third person plural pronoun in several languages. In Lendu (Congo), there are two different forms for ‘people’: *ndrú* and *kpà*. Both of these forms have grammaticalized into a third person plural pronoun

(Heine & Song, 2011, p. 597). In this process, the words have lost their tones. Example (5) shows the use of *ndru* as a third person plural pronoun.

Lendu (Tucker, 1940, p. 392, as cited in Heine & Song, 2011, p. 597)

(5) *ma-zhi* ***ndru****.*
1SG-love 3PL
'I love them.'

Kuteva et al. (2019, p. 317) mention that the emergence of pronominal forms originating from the term 'person' or 'people' is part of a broader process of generic nouns ('man', 'thing', etc.) grammaticalizing into pronominal forms.

In addition to personal pronouns, terms for 'person' have also shown to develop into interrogative pronouns. Often, the term for 'person' combines with the interrogative marker 'which' when forming a new interrogative pronoun, although this does not necessarily have to be the case, as is true for Example (6) from Kukama-Kukamiria (Peru). In this language, the word *awa* does double duty as a noun meaning 'person' and as the interrogative 'who' (Vallejos, 2016, p. 175).

Kukama-Kukamiria (Vallejos, 2016, p. 176)

(6) ***awa*** *n=umi=ui*
who 2SG=see=PST
'Whom did you see?'

However, pronouns are not the only grammatical elements that are the result of grammaticalization of 'person' or 'people'. For instance, in Malay, the word for 'person' is *orang*, but besides its lexical function, *orang* also functions as a numeral classifier. As shown in (7), in combination with a numeral, *orang* serves as a classifier for human nouns.

Malay (adapted from Hopper, 1986b, p. 64, as cited in Hopper & Traugott, 1993, p. 119)

(7) *Ada-lah kami lihat tiga* ***orang*** *budak-budak kena hukum.*
happen we see three CL boy-PL get punishment
'We happened to see three boys getting punished.'

The last form of grammaticalization of 'person' or 'people' in spoken languages that I will discuss is the one which has a plural marker as its outcome. Kuteva et al. (2019, pp. 317–318) theorize that a generic plural noun like 'people' will typically first grammaticalize into a plural marker of human nouns, before it desemanticizes to become a plural marker of all noun types. In the Sema variety of Naga Pidgin (India), the word *log* ('people') has not turned into a general plural marker (yet), being restricted to only human nouns, like in the

word *sualilog* (‘girls’), which is the plural form of *suali* (‘girl’) (Romaine, 1988, p. 137, as cited in Kuteva et al., 2019, p. 318). In contrast, the word *ban* ‘people’ in Seychellois Creole has developed into a plural marker of both human and non-human definite nouns, which is shown for the latter type in (8b). In the meantime, *ban* has retained its original sense ‘people’, as can be seen in (8a).

Seychellois Creole (Corne, 1977, pp. 13–14, 34, as cited in Kuteva et al., 2019, p. 318)

(8) a. ***ban*** *koma* *u*
people how you
‘people like you’

b. ***ban*** *pirog*
PL canoe
‘the canoes’

The different types of grammaticalization are summarized in Figure 2. One can see that ‘person’ has grammaticalized into a variety of different forms, although there does not seem to be much interaction between the different forms. Only the first person plural pronoun form can be traced back to an indefinite or impersonal pronoun, and a general plural marker is probably the next step of the pathway from ‘person’ to a plural marker of human entities.

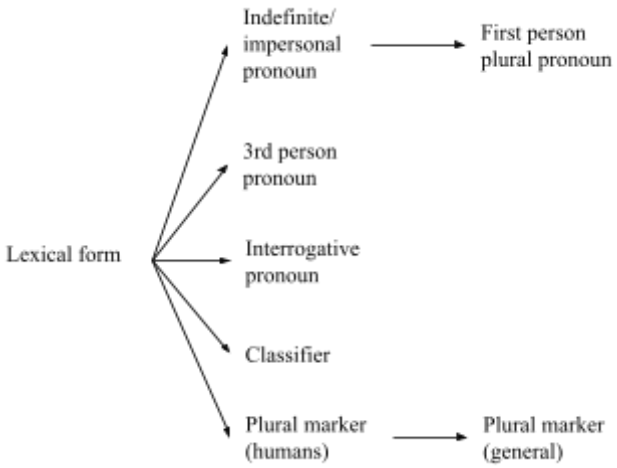



**Figure 2**. The grammaticalization pathways of ‘person’ or ‘people’ in spoken languages.

*2.2.3 Grammaticalization of ‘person’ in sign languages*

As mentioned in Section 2.2.1, grammaticalization processes cannot just be found in spoken languages, but also in sign languages. Regarding the term ‘person’, this is no different. The

sign PERSON has grammaticalized into several grammatical elements, which are sometimes the same as the ones found in spoken languages, but often unique to sign languages.[2]

One use of PERSON which might not be considered grammatical, but is worth mentioning nevertheless, is the formation of a compound with an agentive meaning. This process has been attested in LSC as well as DGS. Example (9) contains an agentive compound from DGS and Example (10) from LSC. These two sign languages differ in the sense that in DGS, PERSON can only follow the sign it forms the compound with, while LSC allows for both compound-initial (10a) and compound-final (10b) position of PERSON.

DGS (Pfau & Steinbach, 2013, p. 203)

(9) STEAL^PERSON
'thief'

LSC (Pfau & Steinbach, 2013, p. 203)

(10) a. PERSON^BREAD
'baker'

b. CUT-HAIR^PERSON
'hairdresser'

Closely related to a compound-like agentive noun is the grammaticalization of PERSON to a derivational suffix for agentive nouns. Of all sign languages, this process has only been described for ASL so far. Based on footage from old films, Supalla (1998, as cited in Sandler & Lillo-Martin, 2006, p. 64f) suggested that the sign PERSON was the origin of the agentive noun suffix in ASL, which attaches to signs like LEARN, OPERATE and HAMMER to form the complex nouns meaning 'student', 'surgeon' and 'carpenter', respectively.

Besides the use of PERSON as a bound morpheme, the sign is also used as a classifier, similar to how classifiers work in spoken languages, like in (7). Example (11) features the sign PERSON in the role of classifier in Swedish Sign Language (*Svenskt Teckenspråk*, STS). The classifier is only used for human-denoting nouns with specific reference, but unlike the Malay example discussed before, the classifier in STS can appear in noun phrases without numerals.

STS (adapted from Bergman & Wallin, 2003, p. 37)

(11) [ONE MAN **PERSON**] SELF SALESMAN INDEX$_{3a}$
'There was a man. He was a salesman.'

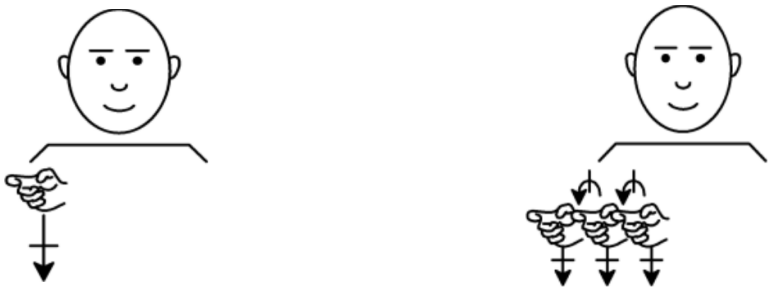
[2] Note that I use capitalized PERSON to refer to the sign and 'person' when discussing the term in general or specific for spoken languages.

Another classifier-like use of PERSON can be found in DGS, although it is used in a different context. DGS uses the plural form of PERSON, which involves sideward reduplication of the plain noun (see Figure 3 for the plain and the plural form), as a pluralization strategy for nouns which cannot be reduplicated in DGS due to their phonological properties (Pfau & Steinbach, 2005, p. 124). Example (12) shows this for the sign WOMAN, which is produced at the ear and can therefore not be reduplicated. As we saw before, this use of the sign PERSON is restricted to human nouns.

DGS (adapted from Pfau & Steinbach, 2005, pp. 125)[3]

(12) WOMAN PERSON>+>+

'women'



(a) (b)

**Figure 3**. The sign PERSON (a) and its sidewardly reduplicated plural form (b) in NGT, DGS, STS, LSC and other sign languages (Pfau & Steinbach, 2005, p. 118, 125).

Turning now to the domain of pronouns, more grammaticalized uses of PERSON can be found. For example, in Lithuanian Sign Language and Russian Sign Language, PERSON has grammaticalized into a reflexive pronoun (Börstell, 2019, p. 9). Besides that, an indefinite pronoun meaning 'someone' has formed in DGS consisting of the signs ONE and PERSON (Pfau & Steinbach, 2006, p. 35), as can be seen in (13). We saw this type of grammaticalization before, when discussing spoken language. Therefore, we can say that this pathway is modality-independent.

DGS (Pfau & Steinbach, 2006, p. 35)

(13) $\text{INDEX}_1$ **ONE^PERSON** SEE

'I've seen someone.'

[3] Pfau & Steinbach (2005) use the term PAM instead of PERSON for the plural classifier. However, since the term PAM has originally been used for an agreement auxiliary which was derived from the sign PERSON, and not in the context of pluralization, I opt for the gloss PERSON. Additionally, PAM can modify its location based on the context, which is not the case for the plural classifier that is described here.

As explained in Section 2.1, sign languages employ indexing as a strategy to localize referents, so that they can be referred back to later on by pointing to the indexed location. With most nouns, one would first have to produce the noun and then point to an arbitrary location to localize that referent. However, as shown for DGS in (14), in some sign languages, PERSON has grammaticalized in such a way that it is articulated at a specific location without the need of a separate indexing sign (Pfau & Steinbach, 2013, p. 205). That is, the sign PERSON still carries its original meaning, but at the same time is produced at a specific location in order to localize the introduced person. The same phenomenon is also attested in LSC.

DGS (Pfau & Steinbach, 2013, p. 205)

y/n

(14) $\text{INDEX}_2$ $\textbf{PERSON}_3$ $_2\text{HELP}_3$

'Are you going to help this person?'

Where in the example before, PERSON is localizing itself, both DGS and LSC have gone a step further on this grammaticalization pathway by employing the sign PERSON to localize human referents in signing space (Pfau & Steinbach, 2013, p. 207). Example (15) from LSC illustrates this use. In the first sentence, a localized form of the sign PERSON (as indicated by the subscript '3-ipsi', where 'ipsi' stands for the ipsilateral side) accompanies the noun WOMAN. This is done to localize WOMAN, and one can see that in the following sentence, an index sign targeting the same location is used to refer back to the woman.

LSC (Barberà, 2012, p. 234)

(15) TODAY INTERVIEW ONE [$\textbf{PERSON}_{\textbf{3-ipsi}}$ WOMAN].

$\text{INDEX}_{3\text{-ipsi}}$ KNOW ENGLISH.

'Today (I) have an interview with a woman. She knows English.

Besides indexing, the sign PERSON has also proven to be useful for marking syntactic agreement. An often cited example of an agreement marker in sign languages is the auxiliary PAM (*Person Agreement Marker*) in DGS (Rathmann, 2000, as cited in Pfau & Steinbach, 2006, p. 32).[4] PAM is used to spell out subject and object agreement when the verb that it accompanies cannot be spatially modified to show person agreement, due to its

[4] Another example of an agreement marker derived from the sign PERSON can be found in LSC, although it often agrees with just first and second person (Quer & Frigola, 2006, as cited in Pfau & Steinbach, 2013, p. 209). Austrian Sign Language (*Österreichische Gebärdensprache*, ÖGS) also features an agreement marker, which has the same form as PAM in DGS, and it has been argued that this also originates from the sign PERSON (Krebs et al., 2017).

phonological properties.[5] The origin of PAM is believed to be the sign PERSON (see Figure 3a). However, the sign no longer involves a straight downward movement; rather, start and end location of the sign match the loci associated with the subject and the object that it agrees with. Example (16) shows that PAM starts at the location where MOTHER was indexed (3a) and moves towards the location where NEIGHBOR NEW was indexed (3b).

DGS (Pfau & Steinbach, 2006, p. 33)

(16) MOTHER $\text{INDEX}_{3a}$ NEIGHBOR NEW $\text{INDEX}_{3b}$ LIKE $\textbf{3a}\textbf{PAM}_{\textbf{3b}}$
'(My) mother likes the new neighbor.'

More commonly, sign languages feature markers which do not mark both the subject and the object, but only the object. These markers, too, are often grammaticalizations of the sign PERSON. Sign languages that feature such object markers include ISL, Spanish Sign Language, STS, Danish Sign Language, Finnish Sign Language, Finland-Swedish Sign Language and Norwegian Sign Language (Meir, 2003; Costello, 2015, p. 197; Börstell, 2017, p. 165f). In most cases, the end location of the sign aligns with the location of the marked object in the signing space. In Example (17) from ISL, the object marker $\text{PRO}_{[bC]}$ is used to mark the object of BE-AFRAID, in this case a previously localized referent.

ISL (Meir, 2003, p. 113)

(17) $\text{INDEX}_1$ BE-AFRAID $\textbf{PRO}_{\textbf{[bC]3}}$
'I am afraid of him.'

Lastly, a case marker derived from PERSON can be found in Georgian Sign Language (Börstell, 2017, p. 164). This marker signals ergative case (i.e. the subject in a transitive sentence) for human referents. Unlike previously given examples, this sign does not change its location based on the referent.

Similar to Figure 2, which shows the grammaticalization pathways of the noun 'person' in spoken language, Figure 4 provides an overview of the grammatical elements that have been derived from the sign PERSON. Unlike Figure 2, there is more interaction between the grammatical forms. The first branch starts with a classifier, which develops into a plural marker or a localized form of PERSON. The latter can further evolve into an indexing function of PERSON and subsequently either an ergative case marker or an object marker. The object marker can finally become a marker of subject and object agreement (like PAM in

[5] Recently, Bross (2020) has argued that PAM actually functions like an object marker in DGS instead of an agreement auxiliary, at least for Southern DGS.

DGS).[6] Besides this main branch, PERSON can develop into an indefinite pronoun or a reflexive pronoun. The final branch contains the development into a component of a compound with agentive meaning which can take on the function of an agentive suffix. When comparing the grammaticalization pathways for spoken and sign languages, one can see that the two figures have little in common. The only three forms that are shared between the two are the classifier use, the indefinite pronoun and the plural marker.

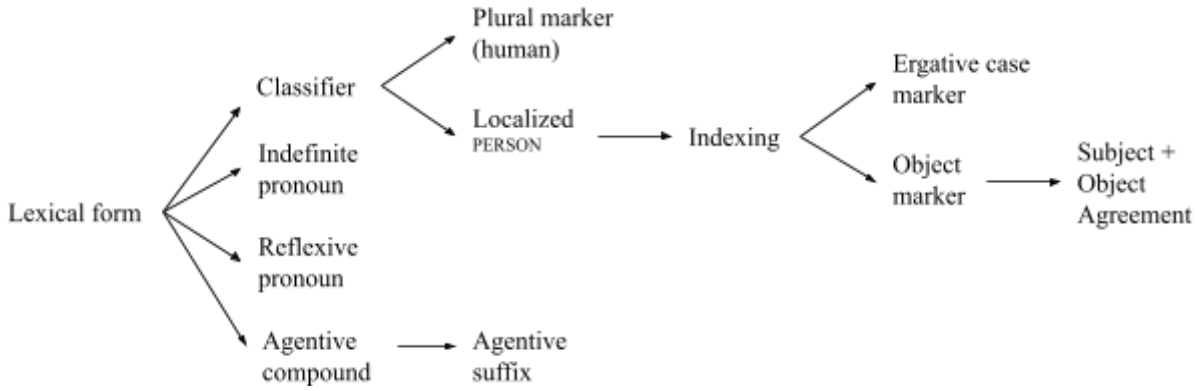



**Figure 4**. The grammaticalization pathways of PERSON in sign languages.

## 2.3 The current study

As Section 2.2.2 and Section 2.2.3 have shown, the term 'person' has proven to be a fruitful source of a variety of grammatical elements in both spoken and sign languages, although the patterns differ between the two modalities. In the past few decades, several sign languages have been analyzed in order to get a clear picture of the different ways that the sign PERSON has grammaticalized in those languages. However, such a comprehensive overview is still missing for NGT. This study will attempt to find out which grammatical functions the lexical sign PERSON has acquired in NGT.

To the best of my knowledge, there is to date no dedicated study on the grammaticalization of the sign PERSON in NGT; yet, based on previous research, we can formulate some hypotheses. First of all, Pfau & Steinbach (2013, footnote 8) indicate that the agentive compound construction, like the one in (9), is also present in NGT, and that the modified noun generally precedes PERSON, like in DGS. Another grammaticalization of PERSON in DGS that is also present in NGT, according to previous findings, is the indefinite pronoun

[6] The pathway from classifier to a marker of subject and object agreement is based on work done by Pfau & Steinbach (2013; see also the graph provided by Börstell, 2017, p. 164). I assumed the ergative case marker to be derived from the same function as the object marker, since both are markers of a syntactic argument. The plural marker was put as a step after classifier, based on Herbert (2018), who analyzed the plural marker in DGS as a plural classifier.

ONE^PERSON (Pfau & Steinbach, 2006, p. 35). Example (18) is an example utterance in NGT containing this construction. In her BA thesis, Mörking (2023, p. 16) presents two additional strategies for forming an indefinite pronoun in NGT, namely the use of only the plain form, and the combination of the signs DIFFERENT and PERSON. However, as I discussed before, Haspelmath (1997) mentions the difficulties in some languages differentiating an indefinite pronoun form from a noun phrase. Therefore, caution is needed when analyzing forms that could be considered indefinite pronouns.

NGT (Pfau & Steinbach, 2006, p. 35)

(18) **ONE^PERSON** WASH-DISH DO MUST

'Someone has to do the dishes.'

Lastly, Pfau & Steinbach (2013, p. 212) found an example which showed that PERSON in NGT can be used to localize human referents, like Example (15) from LSC shown earlier. The example that they found is given as (19) below. Considering Figure 4, the presence of the sign PERSON used for indexing might suggest that the steps between 'Indexing' and 'Lexical form' in the graph are also present in NGT. Following that line of argument, I would expect to also find the use of PERSON as a classifier and the localized use of PERSON in NGT.

NGT (Crasborn et al., 2008, p. 59)

(19) VILLAGE INDEX$_{3a}$ [BOY **PERSON$_{3a}$**] LIVE INDEX$_{3a}$

'There was a boy who lived in a village.'

# 3. Methodology

Because of the substantial amount of research done on grammaticalization, established methodologies have developed over time. However, certain methodologies are less useful than others when looking at sign languages. Therefore, the selected method required some consideration (Section 3.1). To be specific, the process of finding variation of PERSON consisted of two steps. First, I collected utterances containing PERSON from the Corpus NGT (Section 3.2). After that, I analyzed the utterances to see which (lexical or grammatical) meaning the sign PERSON has in the utterance. In Sections 3.3 and 3.4, I will explain this process.

## 3.1 Grammatical reconstruction of sign languages

The easiest and most reliable way of looking at historical changes in a language would be to compare a historic version of a language with the contemporary version. Often, this historic version is preserved by written historic records of a language. However, this is not the case for all languages. Often, languages do not have a written tradition and therefore lack historic records. This is also true for most sign languages, including NGT. This means that it is not possible to deduce the grammaticalization paths that PERSON has followed by comparing an old form of NGT with NGT as it is used today. Therefore, other methods are needed to reconstruct the grammaticalization path of PERSON. This is done by using the comparative method. Based on grammaticalizations of PERSON that have been found in other sign languages, one can — with due caution — make predictions about what grammaticalized forms are likely to be found in a language for which the grammaticalization paths are as yet unknown. Besides that, grammatical forms often retain phonological properties (Pfau & Steinbach, 2013, p. 192). This means that looking for the sign PERSON in a collection of NGT signing allows me to show the possible grammatical forms that PERSON has acquired in NGT.

## 3.2 Data source

The collection of NGT signing that I used is the Corpus NGT, a collection of recordings of (semi-)spontaneous signing of over 90 deaf native signers (Crasborn & Zwitserlood, 2008; Crasborn, Zwitserlood et al., 2008).[7] The signers were from different regions of the

[7] In sign language research, the notion of ‘nativeness’ is often interpreted differently than for spoken language research, due to the “highly idiosyncratic sociolinguistic settings” that play a role in sign language acquisition (Quer & Steinbach, 2019, p. 2). Since most deaf children are born into hearing families, they often do not receive native sign language input from the first day, resulting in atypical language acquisition. Often, more lenient conditions are used when selecting native signer participants. In the context of the Corpus NGT, all signers were deaf from birth and started acquiring sign language “at a very early age” (Crasborn & Zwitserlood, 2008, p. 44).

Netherlands and differed in age from 17 to 84 years old. During the recordings, signers were instructed to do several activities, like retelling stories, explaining cartoons or discussing deaf issues. Part of the recorded data has been annotated in the annotating software ELAN (Eudico Linguistic Annotator; Crasborn & Sloetjes, 2008). Among other things, the annotation consists of glosses per sign, where each hand is annotated on a separate tier. For some of the data, a broad translation is given per utterance. The use of this data source has been approved by the Ethics Committee of the University of Amsterdam under project number FGW-5909.

### 3.3 Data extraction

In order to collect all the (glossed) utterances that contain the sign PERSON, I used the function "Structured search multiple eaf" in ELAN. One can use this function to look for a query on a specific tier. The sign PERSON that is of interest for this research is actually one of multiple variants glossed as "PERSOON" (like the Dutch word) in the corpus. To distinguish the different variants, they are marked by extensions such as "PERSOON-A", "PERSOON-B", etc. The variant that is relevant for this study has the label "PERSOON-A".[8] I used the "Structured search multiple eaf" function to look up all instances of "PERSOON-A" on the gloss tiers.[9] This search yielded occurrences of both the plain form (labeled "PERSOON-A") and the reduplicated form (labeled "PERSOON-A.PL").

### 3.4 Data analysis

Even though this research was exploratory in nature, in the sense that, at the outset, it was not exactly clear which variation was expected to be found, previous research allowed me to make a general prediction on what uses of PERSON were likely to show up. Based on that, I came up with the following coding scheme (see also Table 1).

- ***Lexical form*** refers to the ungrammatical form of PERSON, i.e. the one that would be translated to English as "person". Note that this form of PERSON might be localized if it is produced in a localized context. However, if a localized form of PERSON has a localizing function, i.e. it is used to introduce a new locus, it is not included in this category.
- The second form is the ***Compound form***, where PERSON is still used lexically, but forms a compound with another noun or verb (as in (9)). Again, it might be that the

[8] Curiously, even though the labels are given in alphabetical order, only "PERSOON-A" and "PERSOON-C" are present in the corpus.

[9] Since the sign PERSON is signed with only one hand, the gloss will show up on the tier of just one of the two hands. Therefore, it is not necessary to eliminate double instances of glosses that show up on both the left hand and right hand gloss tier, which would be the case for two-handed signs.

sign PERSON in this compound is localized, but it should not be used for assigning a new locus.

- A special type of compound involving the sign PERSON is the use of PERSON preceded by the sign ONE to signify an ***Indefinite pronoun*** meaning ‘someone’ (as in (13)).
- The ***Classifier*** is the first grammatical form of PERSON in the table. Here, the sign PERSON is used in combination with a human entity (as in (11)). It is important to note that this label only refers to unlocalized classifiers, that is, the sign PERSON does not differ in the place of articulation from the plain form. Localized classifiers would fall under the next category.
- Localized uses of the sign PERSON can be subdivided into two different categories. When PERSON is localized without an antecedent, it receives the label ***Localized PERSON*** (as in (14)).
- If the localized form of PERSON is used to localize another (human) entity, instead of the sign PERSON itself, this is a form of ***Indexing*** (as in (15)).
- Occurrences of PERSON used as an auxiliary to show subject and object marking (like PAM in DGS) receive the label ***Auxiliary*** (as in (16)).
- If PERSON incorporates only object marking, but no subject marking, it falls into the category ***Object marker*** (as in (17)).
- The ***Other*** label is given to uses of the sign PERSON that I encountered which do not fit in one of the categories just mentioned.
- If the form of PERSON in an utterance is not clear or could be interpreted in multiple ways, it receives the label ***Unclear***.

**Table 1.** Coding of different (lexical or grammatical) forms of PERSON.

| Coding | Meaning | Expected glossing |
|---|---|---|
| lf | Lexical form | $\text{PERSON}_{(x)}$ |
| cp | Compound form | XXXX^PERSON |
| ip | Indefinite pronoun | variable |
| cf | Classifier | $\text{NOUN}_{[+human]}$ PERSON |
| lp | Localized PERSON | $\text{PERSON}_{x}$ |
| ix | Indexing | $\text{NOUN}_{[+human]}$ $\text{PERSON}_{x}$ |
| au | Auxiliary | $_{x}\text{PERSON}_{y}$ |
| om | Object marker | $\text{PERSON}_{x}$ |
| ot | Other | |
| uc | Unclear | |

## 4. Results

My search in ELAN on glosses containing “PERSOON-A”, as described in Section 3.3, yielded 261 glosses in total. However, 28 of these glosses were excluded, because

- some reduplicated forms of “PERSOON-A” (which would normally be glossed as “PERSOON-A.PL”) are annotated as a series of separate glosses of “PERSOON-A”, which means that instead of one gloss, there are two or more glosses used for one sign (N = 8);
- some variants of “PERSOON-A” are two-handed and therefore show up twice: once on the left hand tier and once on the right hand tier (N = 8);
- one eaf-file contains the annotations of a different recording, so the same glosses appear in two separate eaf-files (N = 2);
- some signs are labeled as “PERSOON-A”, but are a different sign (N = 4), or just a transitional movement from one sign to another (N = 6).

**Table 2.** Distribution of different (lexical or grammatical) forms of PERSON.

| Coding | Meaning | Glossing | Tokens |
|---|---|---|---|
| lf | Lexical form | $\text{PERSON}_{(x)}$ | 113 |
| cp | Compound form | $\text{XXXX}^{\wedge}\text{PERSON}_{(x)}$ | 26 |
| ip | Indefinite pronoun | variable | 12 |
| cf | Classifier | $\text{NOUN}_{[+human]}$ $\text{PERSON}_{(x)}$ | 17 |
| lp | Localized PERSON | $\text{PERSON}_{x}$ | 35 |
| ix | Indexing | $\text{NOUN}_{[+human]}$ $\text{PERSON}_{x}$ | 19 |
| au | Auxiliary | ${}_{x}\text{PERSON}_{y}$ | 0 |
| om | Object marker | $\text{PERSON}_{x}$ | 0 |
| ot | Other | | 0 |
| uc | Unclear | | 12 |
| | Total | | 234 |

Additionally, I included one extra sign which is glossed as “PERSOON” (without the extension showing the variant of the sign), given that based on the form of the sign, it was safe to assume that the intended gloss should be “PERSOON-A”. In total, this resulted in 234 valid tokens. Table 2 shows the distribution of these tokens across the different categories I introduced in Section 3.4. For each of the categories that I coded for, there were

tokens that fit into that category, except for the 'Auxiliary', 'Object marker' and 'Other' categories. In the following sections, I will discuss each category that yielded at least one token in more detail.

## 4.1 Lexical form

The most frequent use of PERSON in the data is its lexical use (N = 113). In (20a), the plain form is preceded by the determiner EACH. In (20b), a reduplicated form of PERSON follows the adjective DIFFERENT.

NGT (617-S029-00:48; 1687-S069-02:51)

(20) a. BASICALLY EACH PERSON HAVE OWN STYLE.
'Basically, each person has their own style.'

b. $\text{INDEX}_{3a}$ $\text{INDEX}_{3b}$ PALM-UP DIFFERENT PERSON>+>+.
'They are each different people.'

As alluded to in Section 3.4, the 'lexical form' category also contains forms of PERSON that are localized, but only because they are produced in a localized context, as illustrated in (21). Here, the sign PERSON is produced at a locus which is introduced by GO earlier in the sentence. PERSON has no grammatical function in this sentence and retains its semantic properties, which means that this form of PERSON is lexical, even though it is localized.

NGT (539-S025-01:32)

(21) $\text{INDEX}_1$ THINK GOOD JUST $\text{GO}_3$ $\text{PERSON}_3$ $\text{MEET}_3$
'I think it's good to just go and meet the person.'

## 4.2 Compound form

PERSON shows up in several compounds of different types (N = 26), of which two are shown in (22). Even though most of the compound forms consist of only two signs, Example (22a) consists of three signs. In (22b), the adjective CHRISTIAN and the plural form of PERSON form a compound. One could argue that this is not a compound, since it could be analyzed as a noun phrase consisting of an adjective and a noun. However, the mouthing accompanying the two signs is /christenen/ 'christians', which suggests that the signer intended this word group to be a compound.[10]

[10] Note that the glosses can sometimes be deceiving with regards to the word group they belong to. Even though the label of the sign CHRISTIAN suggests it is an adjective, the sign is also used to signify the noun 'Christianity', which I think is the intended use in this specific example. This phenomenon is not restricted to sign languages. For example, English also has the term 'Christian' which is both an adjective and a noun.

NGT (419-S022-00:27; 256-S014-05:23)

(22) a. DRIVE^DRIVING.LESSONS^PERSON
‘driving instructor’
/christenen/

b. CHRISTIAN^PERSON>+
‘christians’

PERSON follows the sign it combines with in all of the compounds, except for two. One of those two is Example (23a), where PERSON precedes the adjective HIGH to form the compound ‘adult’. However, this example could also be translated as ‘person that has grown up’, meaning that it is not a compound, but a noun followed by a reduced relative clause. The same can be said for (23b), which could be interpreted as ‘person that educates’, instead of ‘teacher’. Since there is a lack of research in NGT about the distinction between relative clauses and other combinations of signs, like compound forms, the status of these two compounds remains unclear.

NGT (59-S005-00:26; 534-S025-01:23)

(23) a. PERSON^HIGH
‘adult / person that has grown up’

b. PERSON^EDUCATION
‘teacher / person that educates’

Finally, I provide an example of a compound form that is (partially) localized. Example (24) is part of a conversation about an organization which has previously been localized. Then, the compound CONTACT^PERSON is signed, with PERSON being produced at the location assigned to the organization. Note that CONTACT has not been localized, but produced at its usual location in neutral space.

NGT (531-S025-01:52)

(24) CONTACT^PERSON$_3$
‘contact person’

## 4.3 Indefinite pronoun

The next function of PERSON that was found in the corpus is that of indefinite pronoun (N = 12). I found three different strategies of forming an indefinite or impersonal pronoun from the sign PERSON. The first one, as shown in (25a), is the one that has previously been described in the literature, namely the form ONE^PERSON. Surprisingly, however, most of the occurrences of ONE^PERSON are accompanied by the mouthing /één persoon/ ‘one person’, which implies that signers still interpret this form as a combination of the signs ONE and PERSON, and not as

a new (grammaticalized) pronoun. Example (25b) only uses the noun PERSON, accompanied by the mouthing /iemand/ ‘someone’, which confirms its use as an indefinite pronoun. I also found two occurrences of the sign PERSON localized close to the addressee. In (25c), the signer explains that for deaf people, their environment influences whether they feel handicapped or not. Therefore, the localization of PERSON close to the addressee might be functioning as an impersonal pronoun, similar to impersonal ‘you’ in English.

NGT (96-S002-00:09; 62-S005-01:35; 253-S013-04:50)

(25) a. /één persoon/
INDEX$_1$ ONE^PERSON TALK INDEX$_1$.
‘I talked to someone.’

b. /iemand/
INDEX$_1$ SELF SEE PERSON INDEX$_3$ NEVER DEAF MEET.
‘I’ve seen someone myself who had never met a deaf person.’

c. WHERE INDEX$_2$ PERSON$_2$ INDEX$_2$ INSIDE.
‘(It has to do with) where you are.’

## 4.4 Classifier

PERSON also functions as a classifier in some of the sentences analyzed (N = 17). Example (26a) is a prototypical sentence where PERSON follows the human noun MAN. In all cases of classifiers that I found, PERSON follows the classified noun. The classifier form is also occasionally used in its plural form, as in (26b), where the noun FRIEND does not allow for plural reduplication, but it is followed by the reduplicated form of PERSON. Classifiers derived from PERSON in other sign languages have been argued to combine only with human entities. Although, at first sight, Example (26c) might suggest that the scope of the classifier in NGT is broader, i.e. also referring to animals, I argue that this is not true, given that Example (26c) comes from a retelling of a cartoon featuring Sylvester, an anthropomorphic cat. My hypothesis is that the PERSON classifier in NGT is generally only used for human entities, with the exception of animals that behave in a human-like manner, like the cat in (26c).

NGT (1899-S077-00:41; 364-S019-00:05; 1901-S077-00:05)

(26) a. MAN PERSON SELF RESPONSIBLE SUITCASE MOVE:S$_{luggage}$.
‘The man is responsible for carrying luggage.’

b. TWO FRIEND PERSON>+ WANDER INDEX$_3$ FOREST.
‘Two friends are wandering through the forest.’

c. CAT PERSON ANGRY.
‘The cat is angry.’

## 4.5 Localized PERSON

Even though previous categories also contain localized forms of PERSON, this category only contains occurrences of localized PERSON that actually have a localization function (N = 35). In this case, the sign is produced at a newly established locus in order to localize the sign itself. In (27a), a person is introduced and localized, and referred back to later on in the sentence by an index sign. Example (27b) shows that also the plural form of PERSON can be localized. Besides localized PERSON used for third person referents, I also found two sentences where the signer localized PERSON close to the chest, when referring to themselves (see (27c) and Figure 5).

NGT (386-S019-02:02; 132-S008-04:34; 55-S005-00:36)

(27) a. NETHERLANDS COME $\text{PERSON}_3$ $\text{INDEX}_1$ KNOW $\text{INDEX}_3$ SPAIN.
'A person that I know from Spain came to the Netherlands.'
hs

b. $\text{INDEX}_1$ KNOW $\text{PERSON}>+_3$ $\text{INDEX}_3$ DIFFICULT $\text{INDEX}_3$.
'I know people who don't find it difficult.'

c. $\text{INDEX}_1$ INSIDE ONLY DEAF $\text{PERSON}_1$.
'I'm the only deaf person inside.'

**Figure 5**. PERSON localized on the chest (55-S005-00:37).

## 4.6 Indexing

Besides PERSON localizing itself, the corpus also contains sentences where PERSON is used to localize other nouns (N = 19). For example, in (28a), FARMER is localized using PERSON. This localization is confirmed by an index sign pointing at the same location when referring back to the farmer. In (28b), this happens more clearly. First, WOMAN is followed by a localized form of PERSON, thereby localizing WOMAN. Subsequently, the signer produces the sign OLD followed by an index sign at the same location of PERSON, referring to the woman as being old. Lastly,

another index sign is produced followed by the verb and complement clause WANT SUITCASE BRING, which again refers back to the woman. As we saw before, for the classifier use, PERSON not only accompanies human entities, but occasionally also signs referring to animals, like in (28c). However, this is another example where the animal that is referred to, in this case HARE, is an anthropomorphic animal, which is probably the explanation for the use of PERSON as an indexing sign. Interestingly, only the singular (unreduplicated) form of PERSON was found to be used for indexing, and all antecedents were singular entities. This will be discussed further in Section 5.1. Another noteworthy point is that all antecedents that used PERSON for indexing were body-anchored. This could mean that PERSON is only used for indexing when the referent cannot localize itself, due to phonological restrictions.

NGT (154-S008-00:08; 524-S025-00:29; 514-S025-00:05)

(28) a. ONE MAN FARMER $\text{PERSON}_3$ $\text{INDEX}_3$ WANT EGG COLLECT.
'A man, a farmer, wants to collect eggs.'

b. WOMAN $\text{PERSON}_3$ OLD $\text{INDEX}_3$ $\text{INDEX}_3$ WANT SUITCASE BRING.
'An old woman wants her luggage to be brought away.'

c. HARE $\text{PERSON}_{3a}$ $\text{INDEX}_{3a}$ $\text{INDEX}_{3b}$ TORTOISE $\text{INDEX}_{3b}$
'There is a hare and a tortoise.'

## 4.7 Unclear

12 of the tokens are unclear or unusable. Most of these tokens belong to either of two categories. The first category contains sentences where the signer initiates the production of PERSON, but corrects themself during or after the production of the sign, thereby changing the structure of the sentence. The second group of tokens is unusable, because they are all produced by signers who are backchanneling, i.e. repeating or giving short reactions to what the other signer is saying. Since these are not full sentences, these tokens could not be analyzed.

## 5. Discussion and conclusion

Figure 6 presents the different pathways along which PERSON has grammaticalized in different sign languages, as presented in Figure 4, but now with the functions that were not attested in NGT grayed out. The results support the existence of a classifier, which, on the one hand, developed into a plural marker of human entities and, on the other hand, into a localized form of PERSON, which subsequently was the source of an indexing sign. I also found the use of an indefinite and possible impersonal pronoun and an agentive-like compound. The number of ways in which PERSON is localized in NGT is more diverse than expected and will be discussed in Section 5.1. Furthermore, Section 5.2 will go deeper into the consequences of these different grammaticalized forms of PERSON regarding the meaning of PERSON. The unattested uses of PERSON will be the topic of Section 5.3. Besides these themes, Section 5.4 discusses the limitations of this research and avenues for future research. Finally, Section 5.5 provides the conclusions.

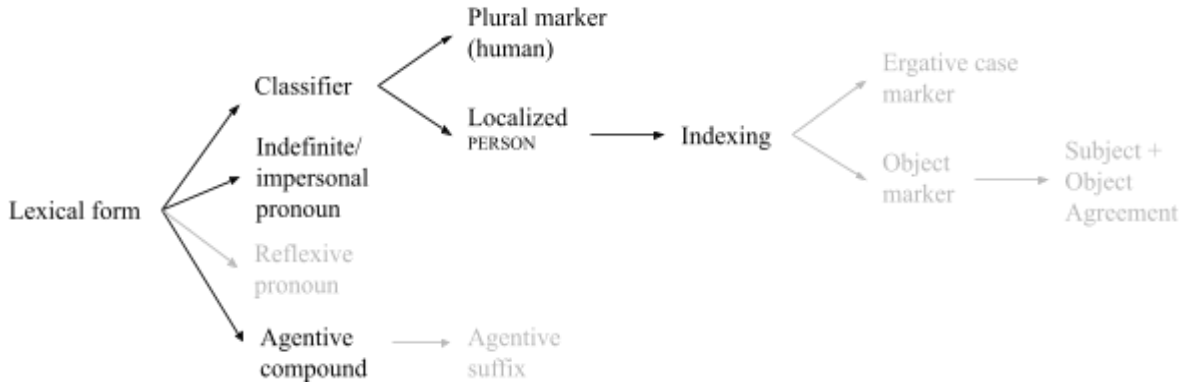



**Figure 6**. The grammaticalization pathways of PERSON in NGT.

### 5.1 Localization of PERSON

As alluded to previously in this chapter, the results show more types of localization of the sign PERSON than initially hypothesized. First of all, as expected, some signers use PERSON as a type of localized noun, in both its singular and plural form. Furthermore, PERSON is used in a similar fashion to an indexing sign. However, the analyzed sentences show that PERSON is restricted to localizing referents, and is never used to pronominalize. Together with the scope of the sign PERSON, which will be discussed in Section 5.2, this is one of the main differences between the sign INDEX and the sign PERSON used for indexing. Another restriction to the use of PERSON for indexing is that I only encountered singular entities that are localized using PERSON. A possible explanation for this is that a plural entity would have to be accompanied by the plural form of PERSON, which is sidewardly reduplicated. However, the nature of this sideward reduplication is that the inflected sign is produced at multiple locations, which

contradicts the essence of localization, namely assigning one single locus to an entity. This contradiction might prevent plural entities from being localized using PERSON.

An unexpected type of localization concerns the impersonal pronoun form, which is formed by localizing PERSON close to the addressee. I found two cases of this type of pronoun (see (25c)), and in both cases, the translation refers to a generic situation, supporting my argument that this form of PERSON is used as an impersonal pronoun. Although this use of PERSON has so far not been described for any sign language, this type of grammaticalization is documented for spoken languages, as Example (3) shows. Interestingly, Mörking (2023, p. 17) found that an index sign pointed at the addressee (glossed as $\text{INDEX}_2$) can be used as an impersonal pronoun in NGT, similar to impersonal 'you' in English. In that light, it does not seem surprising that the same strategy can be fulfilled with PERSON, seeing how PERSON is also functioning similar to an index sign in other ways (e.g. localizing referents). Nevertheless, the emergence of a type of impersonal pronoun in NGT produced at a location near the addressee would challenge the argument of Meir (2003) that iconic signs are unlikely to grammaticalize, due to the difficulty of abstraction of the sign, which usually takes place during a grammaticalization process. Both the indexing sign and the sign PERSON located near the addressee would be unlikely candidates for grammaticalizing into an impersonal pronoun, by Meir's argument, since the form of both signs, especially their location feature, still connects these signs with the addressee, even though this is lost in its sense of generic, impersonal pronoun.

In the corpus, I also found one sign which is glossed as PERSON and produced on the chest (see (27c) and Figure 5). In the relevant sentence, the signer is referring to themselves when signing PERSON, so it makes sense that the sign is produced at the same location where $\text{INDEX}_1$ is produced. I was told by a native signer that this form and use of PERSON is common, and possibly the only correct form, when referring to oneself. A possible reason why I did not encounter this form more often is that there is another sign, PERSONALLY (glossed as "PERSOONLIJK" in the corpus), which has the exact same form. Therefore, it could be that other occurrences of this first person form of PERSON in the corpus are glossed as PERSONALLY.

Finally, one sentence in the corpus which contains the plural form of PERSON is signed at a high locus (see Figure 7). Even though this does not necessarily have to do with the sign PERSON, it is still noteworthy, since the referent is non-specific. Barberà (2012, p. 121) found that in LSC, referents produced at a high locus are interpreted as non-specific. Therefore, this accidental finding for NGT aligns with the use of high locus in LSC.

The analysis of localized forms of PERSON also posed some challenges. Sometimes, the sign PERSON is produced at a non-standard location, but it is not fully clear whether this is meant as a localized form, or whether this is due to assimilation to the location feature of an adjacent sign. In addition, as described in Section 4.1, many occurrences of the lexical form

of PERSON were localized, but only because they are produced in a localized context. To determine whether a localized form of PERSON has a localization function or not, I had to analyze the preceding sentences to see whether the relevant locus had already been assigned to a localized entity. It could be that some occurrences that I coded as 'Indexing' or 'Localized PERSON' actually had another function, but were produced in a localized context.

**Figure 7**. PERSON>+ produced at a high locus (132-S008-00:23).

## 5.2 Semantics of PERSON

One of the main characteristics of grammaticalization, as described in Section 2.2.1, is 'desemanticization', i.e. the loss of meaning of a grammaticalized element. In the case of PERSON, there is also some degree of desemanticization that can be observed. This is notably visible in the indefinite pronoun form. As Haspelmath (1997) already noted, it can be difficult to differentiate an indefinite pronoun form derived from 'person' from the lexical form 'person'. This issue also plays a role in NGT. For example, some occurrences of the indefinite pronoun form ONE^PERSON were accompanied by the mouthing /één persoon/ 'one person', which suggests that the possible indefinite pronoun form is simply a nominal accompanied by a quantifier. However, other candidates for the indefinite pronoun were accompanied by the mouthing /iemand/ 'someone', which makes the assumption that a dedicated indefinite pronoun form derived from PERSON exists in NGT much more likely. In the second case, the dissimilar mouthing supports the desemanticization of PERSON.

Nevertheless, PERSON has not fully desemanticized. This is evident from the scope of the classifier and the indexing function. For both of these forms, the scope of the antecedent is restricted to human entities. Although some sentences use PERSON to classify or localize animals, all of these animals are characters in fables or cartoons and are thus

anthropomorphic. These animals all have human properties, which is probably the reason that PERSON can be used to classify or localize these animals, as previously noted for STS by Börstell (2017, p. 145).

### 5.3 Unattested forms

Even though PERSON grammaticalized into a variety of grammatical markers, not all of the pathways described for other sign languages are part of the grammaticalization journey of PERSON in NGT. For example, PERSON never developed into an object marker, agreement marker of subject and object, or ergative case marker. A possible reason for this is that NGT already has a marker of subject and object agreement, namely the sign ACT-ON, which has its origins in the sign GO-TO (Bos, 1994; Pfau & Steinbach, 2013, p. 213).[11]

Another possible grammaticalized form of PERSON that did not show up in the corpus is the reflexive pronoun form. Similar to the previous case, a plausible explanation for this is that NGT has another sign, glossed as SELF, which is used as a reflexive pronoun, like in (25b). In general, this use of PERSON was only found in Russian Sign Language and Lithuanian Sign Language (Börstell, 2019, p. 9), so it is not a widespread development.

Lastly, although PERSON formed agentive-like compounds with other signs, I did not find evidence to believe that PERSON developed into an agentive suffix. Looking back at Aronoff et al. (2005), the authors actually do not provide any argument supporting their interpretation of PERSON as a suffix in ASL, as opposed to an element in a compound. Therefore, it is difficult to compare the forms in the two sign languages and argue why PERSON in NGT functions like an agentive suffix or not.

### 5.4 Limitations and future research

Corpus data is exceptionally useful for finding out how language is used in spontaneous interactions. Nonetheless, corpora and, more specifically, the Corpus NGT have their limitations. First of all, corpora can only provide positive evidence. The absence of a grammatical form in the corpus does not necessarily imply that this form does not exist. Other methodologies, like a grammaticality judgment task, would be needed to prove the non-existence of a certain grammaticalized form not found in the corpus.

The Corpus NGT in particular also has its limitations. Considering that the recordings in the corpus are between 17 and 19 years old (Crasborn & Zwitserlood, 2008), it could well be that the use of the sign PERSON has shifted in the meantime. This means that, technically, the results only describe how PERSON was used in NGT in the late 2000s. More contemporary

[11] Note, however, that the presence of a grammatical element does not exclude the emergence of another grammatical element with the same function, as we saw with PERSON, which took on the same localization function as INDEX.

data will help to extrapolate the findings to the modern day. One could think of an experiment where sentences with a grammatical form of the sign PERSON are elicited from participants using appropriate stimuli.

Besides the corpus, analyzing the data also presented some challenges. For example, the indefinite pronoun form consisting of just the sign PERSON could also be interpreted as the lexical form. The mouthing helped in some cases, but there was not always a mouthing present (see also Section 5.2).

## 5.5 Conclusion

This thesis attempted to find out which grammatical functions the lexical sign PERSON has acquired in NGT. Based on 234 examples extracted from the Corpus NGT, I can conclude that PERSON has acquired various more or fully grammatical meanings, most of which had previously been described for other sign languages. In particular, it developed into a classifier, which evolved into a plural marker of human nouns and a localized form of PERSON. The latter was the source for an indexing function of PERSON, restricted to localization of human entities. Furthermore, PERSON acquired the function of an indefinite pronoun and appears in agentive-like compound forms. Even though this research is exploratory in nature and only provides positive evidence, of which some is mere incidental, one can safely assume that PERSON is a sign with many personalities.

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# Appendix A - Sign language glossing conventions

| | |
|---|---|
| SIGN | Signs are written in small caps. |
| SIGN-SIGN | When one sign is glossed as multiple words, these word are separated by a hyphen. |
| SIGN^SIGN | In compounds, the different signs are separated by a circumflex. |
| SIGN>+>+ | For sidewardly reduplicated signs, each duplicate is marked by >+. |
| $\text{SIGN}_{1, 2, 3}$ | When signs are localized, they are marked with their location in subscript (‘1’ means ‘close to the signer’, ‘2’ means ‘close to the addressee’, ‘3’ means ‘any other location’). |
| y/n | Non-manual markers are annotated above the glosses. The length of the underlined part shows the scope of the non-manual (‘y/n’ stands for ‘yes/no questions; ‘hs’ stands for ‘headshake’). |
| /mouthing/ | Mouthings are annotated above the gloss between slashes. The length of the underlined part shows the scope of the mouthing. |