PERSON climbing up a tree (and other adventures in sign language grammaticalization)

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1 Introduction[1]

→ Just like spoken languages, sign languages (SLs) are subject to diachronic changes due to external (e.g. language contact and standardization) and internal factors (e.g. ease of production/perception); see e.g. Battison (1978), Schermer (2003), Frishberg (1975).
→ Here we focus on one type of internal change, grammaticalization, whereby grammatical morphemes (free elements or bound affixes) develop from lexical elements.
→ Typically, the lexical element undergoing grammaticalization loses its lexical meaning (*desemanticization*) as well as its categorical and argument-taking properties (*decategorization*), and it may be phonologically reduced (*phonological erosion*) (Heine & Kuteva 2002a).
→ Recent studies on grammaticalization in SLs have shown that, for the most part, the attested grammaticalization pathways are modality-independent (see Pfau & Steinbach (2006, 2011) and Janzen (2012) for overviews).
→ To date, studies on SL grammaticalization have either been descriptive – presenting and comparing phenomena from various SLs – or were embedded in functional-cognitive theories of language (e.g. Janzen 1999; Wilcox et al. 2010).
→ In contrast, we are going to explore how selected grammaticalization phenomena can be accounted for within generative theories of syntactic change. Again, this endeavour is guided by the question whether the same structural processes and changes can account for the data under consideration.

2 Grammaticalization in sign languages

2.1 Methodological challenges

→ Since SLs lack a written form, the identification and comparison of earlier and later forms of structure on the basis of written records is impossible.
→ Method of linguistic reconstruction is internal reconstruction (IR), "the exploitation of patterns in the synchronic grammar of a single language […] to recover information about its prehistory" (Ringe 2003:244). Obviously, the methods of IR are generally less reliable.
→ Given: (i) that the lexical and the grammatical item are phonologically similar,
(ii) that grammaticalization is unidirectional (Lehmann 1995), and
(iii) that we do know about common grammaticalization paths from the study of languages for which written records do exist,
we may make inferences about grammaticalization on the basis of synchronic data.

[1] For help with the DGS and LSC data, we are indebted to Gemma Barberà, Annika Herrmann, Jana Hosemann, Andrea Kaiser, Roland Metz, Josep Quer, Conny Tiedemann, and Jutta Warmers.
Sign language (SL) acronyms used: **AdaSL** – Adamorobe SL (Ghana); **ASL** – American SL; **DGS** – German SL; **GSL** – Greek SL; **ISL** – Israeli SL; **LIS**- Italian SL; **LSA** – Argentinean SL; **LSC** – Catalan SL; **NGT** – SL of the Netherlands; **TSL** – Taiwan SL; **VGT** – Flemish SL.

2.2 Grammaticalization of lexical elements

→ In SLs, just as in spoken languages, lexical elements may diachronically develop into grammatical markers, and these changes are characterized by desemanticization, decategorization, and phonological erosion.
→ Two examples: (i) in ASL, the verb GO-TO (1a) has developed into a future tense marker (1b) (Janzen & Shaffer 2002: 203; Neidle et al. 2000: 79); (ii) in DGS, the noun REASON (2a) has developed into a cause-complementizer (2b). Both these grammaticalization paths are also common in spoken languages (Heine & Kuteva 2002b).
→ In both grammaticalized forms, we observe phonological reduction: shorter movement trajectory in (1b) and loss of repetition in (2b).

(1) a. TWO, THREE DAY PREVIOUS E.M. GALLAUDET **GO-TO** TOWN PHILADELPHIA [ASL]
'Two or three days before, (E.M.) Gallaudet had gone to Philadelphia.'

b. JOHN **FUTURE**$_{tns}$ BUY HOUSE
'John will buy a house.'

top neg
(2) a. **REASON,** INDEX$_1$ UNDERSTAND [DGS]
'I don't understand the reason.'

b. INDEX$_1$ SAD **REASON** POSS$_1$ DOG DIE
'I'm sad because my dog died.'

→ Other pathways that have been described include (cf. Pfau & Steinbach 2006):
- from noun/adjective to modal verb in ASL and LSC (Wilcox & Wilcox 1995; Janzen & Shaffer 2002; Wilcox 2004, 2007);
- from verb/adverbial to completive/perfective aspect marker in ASL, LIS, ISL, and other SLs (Fischer & Gough 1972/1999; Sexton 1999; Zucchi 2003; Meir 1999);
- from noun to pronoun in ISL (Meir 2003);
- from adjective/verb to intensifier in ASL, DGS, and AdaSL (Sexton 1999).

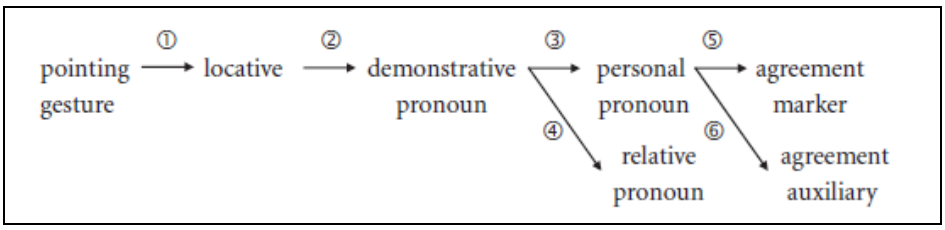
→ Moreover, dedicated agreement auxiliaries, which spell out agreement in the context of plain verbs in some SLs, may grammaticalize from various sources: verbs, nouns, and pronouns (Steinbach & Pfau 2007; Sapountzaki 2012).
→ It has been shown that the V-to-Aux chain involves modality-independent event schemas (Heine 1993) such as the Motion Schema (NGT, TSL) and the Action Schema (GSL).
→ In contrast, the N-to-Aux chain, which (in DGS and LSC) involves the noun PERSON, appears to be modality-specific; this chain will be discussed in detail in section 5.
→ A noteworthy aspect of grammaticalization in SLs is that instances of type 2-grammaticalization (i.e. development of affixes from free grammatical elements) appear to be rare (see Aronoff et al. (2005) for examples).

2.3 Grammaticalization of gestures

→ Besides the more familiar pathways from lexical to grammatical element sketched above, SLs have the unique possibility of grammaticalizing manual and non-manual gestures.
→ Wilcox (2004, 2007) distinguishes two grammaticalization paths from gesture to sign:
(i) the gesture first develops into a lexical element, which may then further develop into a functional element (e.g. ASL FUTURE and modal verbs CAN and MUST);
(ii) grammaticalization proceeds directly from a gestural source to a functional element, skipping the intermediate lexicalization stage (e.g. pointing signs, question particles, and classifiers).

→ One instance of a grammaticalized gesture is the pointing sign INDEX, for which Pfau & Steinbach (2006, 2011; also see Pfau 2011) propose the grammaticalization chain in (3). Note that steps ②, ③, ④, and ⑤ are also common in spoken languages.
→ In addition, non-manual gestures may grammaticalize, e.g. non-manual topic marking (Janzen 1999) and negative headshakes (Pfau 2002, 2008).

(3)



3 A generative perspective on grammaticalization

→ Roberts & Roussou (2003) present the first attempt to account for grammaticalization in terms of a formal theory of syntax, the Minimalist Program (Chomsky 1995).
→ In a nutshell, they argue that grammaticalization is basically "reanalysis 'upwards' along the functional structure" (Roberts & Roussou 2003: 71), or, to put it differently, that grammaticalization is 'up the tree' (van Gelderen 2011).
→ Amongst other things, they show that (i) verbal elements are commonly reanalyzed as T- and subsequently as C-elements and that (ii) features typically associated with the DP-domain may become associated with functional heads in the clausal domain (e.g. D-to-C).
→ That is, a lexical L element may be reanalyzed as a functional element F_1 which occupies a position higher in the structure, and a functional element F_1 may be reanalyzed as another functional element F_2 occupying a hierarchically higher functional head.
→ Both processes may, but need not, apply in sequence (L → F_1 → F_2), and crucially, reanalysis never proceeds 'downwards'.
→ As an example of V-to-T reanalysis consider the French future suffixes which originate from a periphrastic construction involving the verb *avoir* ('to have'). Compare the singular forms of *avoir* in (4a) to the suffixes attached to the verb *chanter* ('to sing') in (4b) (Roberts & Roussou 2003: 49).

(4) a. *avoir*: *ai* (1SG), *as* (2SG), *a* (3SG) [French]
b. *chanter*: *chanter-ai* (1SG.FUT), *chanter-as* (2SG.FUT), *chanter-a* (3SG.FUT)

→ Simplifying somewhat, the relevant structural changes are listed in (5). First, the lexical verb *avoir* was reanalyzed as a future auxiliary (i.e. 'merge over move') (5a). Second, the auxiliary was reanalyzed as an affix (5b), resulting in obligatory V-to-T movement.

(5) a. $[_{TP}\ [_{T}$ avoir $[_{VP}$ V t_{avoir}]]] > $[_{TP}\ [_{T}$ avoir $[_{VP}$ V]]]
b. $[_{TP}\ [_{T}$ avoir $[_{VP}$ V]]] > $[_{TP}\ [_{T}$ V + Af $[_{VP}\ t_{V}$]]

(6) $[_{DP}\ [_{D}$ ille $[_{DemP}\ t_{ille}\ [_{NP}$ N]]]] > $[_{DP}\ [_{D}$ (il)le $[_{NP}$ N]]]

→ The change from the Latin demonstrative pronoun *ille* to the French definite determiner *le* exemplifies reanalysis within the DP. Simplifying again, this reanalysis implies loss of Dem-to-D movement (again 'merge over move') going hand in hand with phonological reduction (Giusti 2001); see (6) for the relevant structural change.

4 Case study I: GIVE

4.1 From verb to auxiliary

→ Agreement auxiliaries in sign languages developed from three different lexical sources: verbs, pronouns, and nouns (Steinbach & Pfau 2007). The first grammaticalization chain (V-to-Aux) is also frequently attested in spoken languages.

→ Agreement auxiliaries that have been developed from verbs:

(i) in NGT the auxiliary ACT-ON, which is regularly used with plain verbs and adjectival predicates, is grammaticalized from the spatial verb GO-TO (Bos 1994).

(ii) in TSL, one auxiliary (AUX-2) is grammaticalized from the one-handed verb SEE; the other (AUX-11) from the two-handed verb MEET (Smith 1990).

(iii) in GSL, the lexical verb GIVE has been the source for the agreement auxiliary GIVE-AUX.

→ Sapountzaki (2005: 131f.) shows that in GSL, the verb GIVE (7a) developed into an agreement auxiliary (7bc), expressing the additional meaning of causative change of state.

→ A similar auxiliary has been described for LSC (7d). As in GSL, this auxiliary (AUX-DA) is grammaticalized from the lexical verb GIVE, and it combines exclusively with psychological predicates in order to express a causative result (Quer & Frigola 2006).

(7) a. INDEX$_1$ TEACHER BOOK **$_1$GIVE$_3$** [GSL]
'I give the book to the teacher.'

b. INDEX$_2$ **$_2$GIVE-AUX$_3$** BURDEN END
'Stop being a trouble/nuisance to him/her!'

c. INDEX$_1$ SEA ALL-IN-FRONT-OF-ME SIT SUN SUN-SETS, WHAT?
$_3$GIVE-AUX$_1$ (gesture "oh, how nice!") BE-CALM, BE-HAPPY
'When I sit in front of the sea and the sun sets, what is it like?
It makes me calm and happy.'

d. /da/
EXAM **$_3$AUX-DA$_1$** NERVOUS [LSC]
'The exam makes me nervous.'

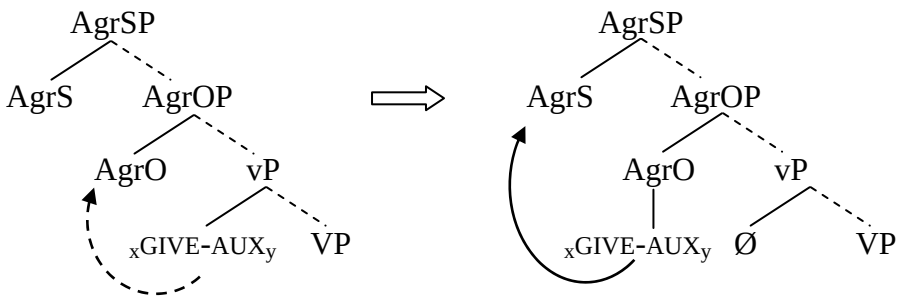
→ Causative markers that developed from the verbal source 'give' are also attested in spoken languages, where the causative marker can be a complementizer, an auxiliary, or an affix.

→ A causative auxiliary grammaticalized from the verb 'give' is, for instance, attested in Luo, a Nilotic language spoken in Kenya and Tanzania (Stafford 1967: 72), see (8).

(8) Koth no-**miyo** wa-bedo e tiend yath [Luo]
rain 3-give 1.PL-stay at foot tree
'The rain made us stay at the foot of the tree.'

→ The structural change is sketched in (9). Note that the broken arrow indicates that we are not dealing with syntactic movement but rather with a functional change.

(9)



4.2 Discussion

→ In (10), we provide an overview of the steps on the grammaticalization path of GIVE argued for in this section.

(10) GIVE ⟶ [$_{v}$ $_{x}$GIVE-AUX$_{y}$] ⟶ [$_{AgrO}$ $_{x}$GIVE-AUX$_{y}$]
verb causative marker agreement auxiliary

→ The structural changes that are at play in the grammaticalization of GIVE are listed in (11).
→ We assume that the grammaticalization of GIVE-AUX involves a structural change from V to the extended projection of V, little v.
→ The basis for this change is the transfer semantics associated with the source verb GIVE on the one hand and its spatial properties on the other. GIVE is the optimal candidate for this kind of grammaticalization since, in contrast to other agreement verbs, it only expresses transfer from A to B without additional meaning.
→ The observed change involves reanalysis of GIVE as a causative marker, which is merged as GIVE-AUX in the head of vP (specified as [+cause]; Harley 1995) as illustrated in (11a).

(11) a. [$_{VP}$ [$_{V}$ $_{x}$GIVE$_{y}$]] > [$_{vP}$ [$_{v}$ $_{x}$GIVE-AUX$_{y}$] [$_{VP}$ [$_{V}$ VERB]]]
b. [$_{vP}$ [$_{v}$ $_{x}$GIVE-AUX$_{y}$]] > [$_{AgrOP}$ [$_{AgrO}$ $_{x}$GIVE-AUX$_{y}$] [$_{vP}$ [$_{v}$ Ø] [$_{VP}$ [$_{V}$ VERB]]]]

→ Consequently, the head of VP is empty and thus becomes available for merger of another lexical verb.
→ After being merged in v, GIVE-AUX (just like the agreement verb GIVE) has to move to AgrO and AgrS to check its agreement features.
→ One may speculate that in a following step, GIVE-AUX is merged even higher in AgrO and thus becomes a 'pure' agreement auxiliary (11b). In this case, little v would also become available for merger with another lexical verb.

5 Case study II: PERSON

5.1 From noun to agentivizer

→ The noun PERSON is phonologically identical in DGS and LSC; it is signed with a L -hand in ipsilateral signing space with a straight downward movement. The examples in (12) and (13) illustrate the use of this noun in DGS and LSC, both by itself and in combination with a localizing INDEX (LSC examples provided by Gemma Barberà).

(12) a. YESTERDAY MEETING INDEX$_{3a}$, NINE **PERSON** BE-PRESENT$_{3a}$ [DGS]
'Yesterday at the meeting, there were nine people present.'

b. INDEX$_{1}$ THINK INDEX$_{1}$ [**PERSON** INDEX$_{3a}$] KNOW
'I think I know this person.'

(13) a. **PERSON** MILLION WORLD ALREADY READ BOOK MATEIX [LSC]
'Millions of people have already read this book.'

b. [**PERSON** INDEX$_{3}$] POSS$_{1}$ FRIEND GOOD HEART
'My friend is a good person.'

→ In both SLs, the noun PERSON may combine with other signs – verbs or nouns – in a compound to form agentive nouns. In DGS, PERSON always follows the sign it attaches to (14) while in LSC, it may precede (15ab) or follow (15cd) the other sign.

(14) a. PAINT^PERSON ‘painter’ b. STEAL^PERSON ‘thief’ c. SPORT^PERSON ‘sportsman’ [DGS]

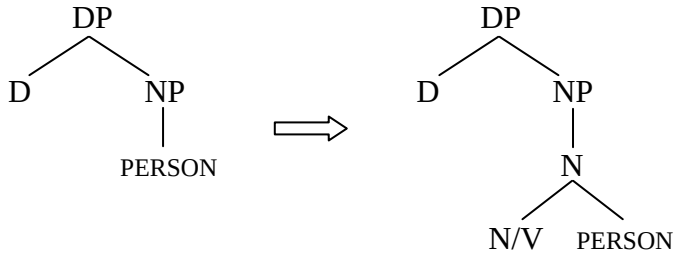
(15) b. PERSON^DRIVE ‘driver’ b. PERSON^BREAD ‘baker’ [LSC]

c. CUT-HAIR^PERSON ‘hairdresser’ d. SHOP^PERSON ‘seller’

→ A similar phenomenon has been described for other SLs, including NGT (where PERSON is phonologically identical) and ASL (where PERSON is two-handed).

→ Note that we are not assuming that PERSON functions as an affix in the above examples (in contrast to what has been argued for ASL; cf. Aronoff et al. (2005)); that is, these examples do not exemplify grammaticalization but rather lexical compounding (16).

(16)



5.2 Acquiring spatial properties: from noun/agentivizer to indexical sign

→ In both, its nominal and agentive use, PERSON itself may be localized in signing space, as illustrated by the examples in (17) (LSC example adapted from Barberà (2012: 266)).

(17) a. y/n
INDEX$_2$ **PERSON$_{3a}$** $_2$HELP$_{3a}$ [DGS]
‘Are you going to help this person?’

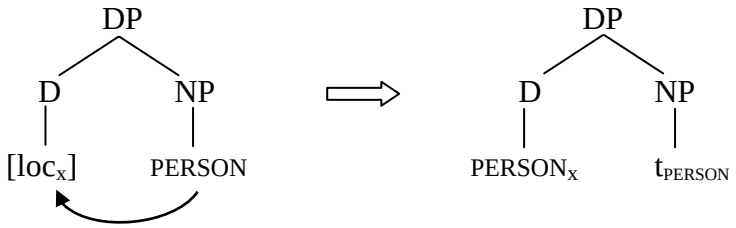
b. INDEX$_1$ $_1$OFFER$_3$ ONE **PERSON$_{3\text{-ipsi}}$** PEN-DRIVE COMPUTER PEN-DRIVE $_1$OFFER$_{3\text{-ipsi}}$, BECAUSE **PERSON$_{3\text{-ipsi}}$** ALWAYS++ WORK […] [LSC]
‘I will offer a pen-drive to a person/someone since he/she/this person always works (with computers).’

→ In this use, PERSON still functions as a noun, but it is now endowed with spatial features. Note that in both SLs, other nouns which are lexically specified for the location feature [neutral space] can be localized in a similar fashion (e.g. HOUSE, CHILD).

→ It is possible that localization of PERSON results from the combination of PERSON with a following index (i.e. PERSON INDEX$_{3a}$ → PERSON$_{3a}$), as in (12b) and (13b).

→ Thus, we may either assume that PERSON fuses with INDEX or that it moves to the functional position within DP which hosts the locative feature (D° in the accounts of Bertone (2007) and Brunelli (2011)) – the latter option being illustrated in (18).

(18)



→ Once PERSON is endowed with spatial features, the stage is set for the crucial next step in its grammaticalization: PERSON looses its categorial features (decategorization) and becomes a purely indexical sign.

→ As an indexical sign, it behaves like a localizing INDEX, one important difference being that it only combines with nouns specified as [+human], as is illustrated for DGS in (19).

(19) a. [WOMAN **PERSON$_{3a}$**] TOMORROW INDEX$_1$ $_1$VISIT$_{3a}$ [DGS]
'I will visit the/that woman tomorrow.'

b. [MAN **PERSON$_{3a}$**] SIT TELEVISION SMOKE
'The man is sitting in front of the television and smokes.'

→ In our DGS data, the indexical PERSON$_x$ always follows the noun it localizes. We thus assume (following Brunelli (2011: 86f)) that in its non-referential use, PERSON$_x$ is base-generated in D° (or whatever functional position hosts indexical signs) and that the noun moves to a position above D°.

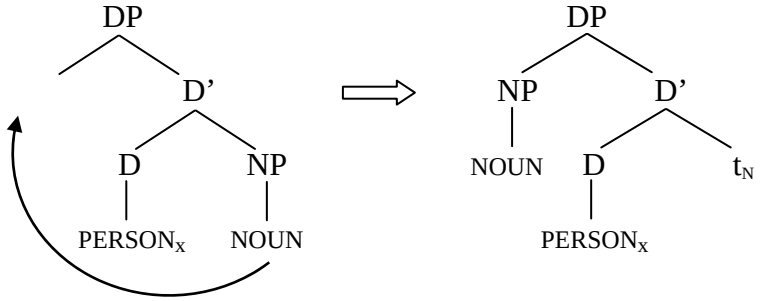
→ The LSC data suggest that in such cases, movement of the noun to a position above PERSON$_x$ is optional, as PERSON$_x$ may either precede (20a) or follow (20b) the noun it accompanies (Barberà 2012: 169, 234).

(20) a. TODAY INTERVIEW ONE [**PERSON$_{3\text{-ipsi}}$** WOMAN]. IX$_{3\text{-ipsi}}$ KNOW ENGLISH. [LSC]
'Today (I) have an interview with a woman. She knows English.'

b. IX$_{3\text{-ipsi}}$ [WOMAN **PERSON$_{3\text{-ipsi}}$**] CHARACTER IS/EXACT JEW.
'This girl was a Jew.'

→ The structure in (21) illustrates the option in which the noun precedes PERSON$_x$. Once PERSON$_x$ grammaticalized into a D-element, the position within NP becomes available for another noun, which subsequently raises to a higher position within the structure, be it SpecDP or the specifier of some other intervening functional projection.

(21)



→ Clearly, PERSON$_x$ climbed up the syntactic tree (N-to-D), loosing semantic and categorial features in the process, as is characteristic for grammaticalization. Still, PERSON$_x$ remains within the same maximal projection, DP.

5.3 Exploiting spatial properties: from indexical sign to auxiliary

→ As briefly mentioned in section 2.2, some SLs employ agreement auxiliaries to express agreement in the context of plain verbs. These auxiliaries may grammaticalize from verbs (e.g. NGT, TSL) or concatenated pronouns (e.g. IPSL, LSC, LSA, TSL).
→ Interestingly, in DGS and LSC, an agreement auxiliary developed from the noun PERSON (Steinbach & Pfau 2007); it is glossed as PAM (*Person Agreement Marker*) in DGS (Rathmann 2000), as AUX-PERSON in LSC (Quer & Frigola 2006).
→ While PERSON / PERSON_x do not exhibit a directional movement, the agreement auxiliaries express the agreement relation by path movement and orientation of the fingertips.
→ In DGS, PAM is used with plain verbs (22a) and adjectival predicates (22b). It may display agreement for all person features, may inflect for plural, may be used in reciprocal constructions (Pfau & Steinbach 2003), but does not inflect for aspect.

(22) a. $\text{A-N-N-A INDEX}_{3a}\ \text{POSS}_{3a}$ PARTNER TRUST $\mathbf{_{3a}PAM_{3b}}$ [DGS]
'Anna trusts her husband.'

b. $\text{INDEX}_1\ \text{POSS}_1$ BROTHER INDEX_{3a} PROUD $\mathbf{_1PAM_{3a}}$
'I am proud of my brother.'

/štolts/
c. POSS_1 BROTHER $\text{INDEX}_{3a}\ \text{INDEX}_1$ PROUD^$\mathbf{_1PAM_{3a}}$
'I am proud of my brother.'

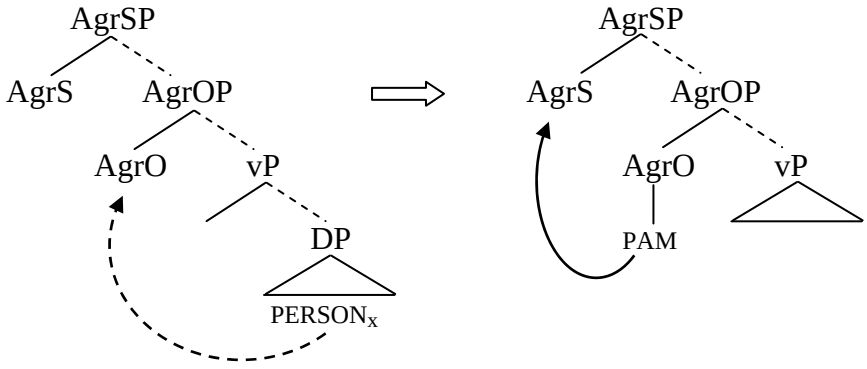
→ PAM may cliticize to lexical host (22c); assimilation phenomena: (i) continuous movement contour, (ii) optional regressive handshape assimilation, (iii) mouthing associated with lexical host spreads over PAM → lexical host and PAM form one prosodic word.
→ Use of LSC AUX-PERSON appears to be more restricted. Mostly, it agrees only with 1st and 2nd person arguments (23a) and frequently with objects only (23ab). It can inflect for plural (distributive), and sometimes for aspect, but is not used in reciprocal constructions.

(23) a. INDEX_1 ANGRY $\mathbf{AUX\text{-}PERSON_2}$ [LSC]
'I am angry with you.'

br
b. THEME HISTORY, TEACHER $_3\text{EXPLAIN}_3$ $\mathbf{(AUX\text{-})PERSON_3}$ STUDENT IX_{3PL} SEVERAL-TIMES
'The teacher explained to the students the theme of history plenty of times.'

→ Cross-linguistically, the N-to-Aux chain attested in DGS and LSC is highly unusual if not non-existent (Heine 1993). Kuteva (2001: 22), for instance, states that "all lexical sources for auxiliary verb constructions involve verb meanings which are relatively concrete and basic to human experience".
→ The structural change is sketched in (24). Note that the broken arrow indicates that we are not dealing with syntactic movement but rather with a functional change (in contrast to (18) and (21) above).

(24)



→ Crucially, in this grammaticalization step, PERSON$_x$ exits the DP and is inserted under AgrO – now glossed as PAM signalling its new function. From there, it moves further up to AgrS, undergoing Spec-head-agreement with the relevant argument in both positions.

5.4 Discussion

→ In (25), we provide an overview of the steps on the grammaticalization path of PERSON argued for in this section.

(25) PERSON / ^PERSON ⟶ PERSON$_x$ ⟶ [NOUN PERSON$_x$] ⟶ $_{(x)}$PAM/AUX-PERSON$_y$
noun / agentive — localized noun — indexical use — agreement auxiliary

→ The structural changes relevant in the grammaticalization of PERSON are listed in (26).
→ (26a) and (26b) illustrate the transition from lexical noun to indexical sign; note that (26b) exemplifies an instance of 'merge over move'.
→ In the final grammaticalization step in (26c) PERSON$_x$ exits the DP and is inserted under AgrO – this seems to be a modality-specific step of grammaticalization.

(26) a. $[_{DP}$ D $[_{NP}$ PERSON $]]$ > $[_{DP}$ $[_{D}$ PERSON$_x$ $]$ $[_{NP}$ t_{PERSON} $]]$
b. $[_{DP}$ $[_{D}$ PERSON$_x$ $]$ $[_{NP}$ t_{PERSON} $]]$ > $[_{DP}$ $[_{D}$ PERSON$_x$ $]$ $[_{NP}$ NOUN $]]$
c. $[_{DP}$ $[_{D}$ PERSON$_x$ $]$ $[_{NP}$ NOUN $]]$ > $[_{AgrSP}$ $[_{AgrS}$ $_x$PAM$_y$ $]$ $[_{AgrOP}$ $[_{AgrO}$ t_{PAM} $]]]$

→ In contrast to spoken languages, a noun like PERSON is a convenient source for the development of an auxiliary in SLs because it is endowed with all phonological and semantic properties relevant for the expression of agreement.
→ Recall that, as opposed to agreement in spoken languages, agreement in sign languages is a spatial concept that depends on phonological properties of a verb or auxiliary and on semantic properties of the arguments.
→ Consequently, phonological and semantic properties of a sign may be more important for the development of agreement markers than event schemas and grammatical category.
→ The determiner PERSON$_x$ in (26c) has two properties that are highly relevant for agreement in sign languages.
→ First, it has all phonological and syntactic properties necessary to express agreement:
(i) the determiner PERSON$_x$ is an indexical sign that can be freely localized in the signing space;
(ii) it is produced with a simple downward movement; hence, the beginning and endpoint of the path movement are not lexically specified;
(iii) its orientation and handshape features are ideal for agreement marking.

→ Second, like verbal agreement, the nominal source in (26a) and the determiner in (26b) are semantically specified as [+human]. Moreover, as opposed to signs such as CHILD, WOMAN, or MAN, which are also specified as [+human], PERSON has no additional semantic specification. Hence, the final grammaticalization step in (26c) is – at least – not blocked by semantic constraints.
→ Note that the availability of a (phonologically similar) noun PERSON, which allows for spatial modification and can be used as an indexical sign, is no guarantee for the development of an agreement auxiliary.
→ In NGT, for instance, the noun PERSON can also be used to localize [+human] nouns, as illustrated in (27) (Crasborn et al. 2008: 59).

(27) VILLAGE INDEX$_{3a}$ [BOY **PERSON$_{3a}$**] LIVE INDEX$_{3a}$ [NGT]
'There was a boy who lived in a village.'

→ Still, NGT PERSON does not take the final step in (26c), a likely reason being that NGT opted for a different, and typologically more common, grammaticalization path, i.e. from the verb GO-TO to agreement auxiliary (Bos 1994).

5 Conclusion

→ In this talk we argued that in general, grammaticalization phenomena in SLs can be accounted for within modality-independent generative theories of syntactic change.
→ In particular, we illustrated that the grammaticalization of two different kinds of SL agreement auxiliaries involves reanalysis 'upwards' along the functional structure.
→ The development of the GSL agreement auxiliary GIVE-AUX can be analyzed as a structural change from V to the extended projection of V, little v – and probably also higher up to the next extended projection AgrO.
→ By contrast, the grammaticalization of the DGS/LSC agreement auxiliaries involves two transitions: (i) The lexical noun PERSON becomes the indexical sign PERSON$_x$; (ii) then PERSON$_x$ exits the DP and is inserted under AgrO. This second step is modality-specific.
→ Both grammaticalization paths are summarized in (28):

(28) a. GIVE (verb) ⟶ [$_{v\ x}$GIVE-AUX$_y$] (causative marker) ⟶ [$_{AgrO\ x}$GIVE-AUX$_y$] (agreement auxiliary)

b. PERSON / ^PERSON (noun / agentive) ⟶ PERSON$_x$ (localized noun) ⟶ [NOUN PERSON$_x$] (indexical use) ⟶ $_{(x)}$PAM/AUX-PERSON$_y$ (agreement auxiliary)

→ We assume that other grammaticalization phenomena described in the literature can be accounted for along similar lines, e.g. the grammaticalization of pointing sketched in (3).
→ Things are less clear when it comes to the grammaticalization of non-manuals, but even for some of them, upward reanalysis might be suggested.
→ For ASL, Janzen (1999) suggests that a communicative non-manual gesture (raised eyebrows) started out as a grammatical yes/no-question marker and then developed further into a topic marker.
→ Given that in cartographic approaches to phrase structure, it is assumed that a topic phrase sits above an interrogative phrase within the left periphery (Rizzi 2001; Aboh 2004), the grammaticalization of topic marking may involve Inter-to-Top reanalysis.

→ Similarly, one might claim that an affirmative headnod occupying a polarity head within the inner functional layer gets reanalyzed as a focus marker occupying Foc° in the left periphery of the clause (this reanalysis being accompanied by phonological reduction).

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