Sign language agreement – common ingredients, but unusual recipe

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1. Summary. The sign language (SL) phenomenon that some scholars refer to as 'agreement' has triggered controversial discussions among SL linguists. Crucially, it has been argued to display properties that are at odds with the notion of agreement in spoken languages. A thorough theoretical investigation of the phenomenon may thus add to our understanding of the nature and limits of agreement in natural language. We argue both against previous non-syntactic gesture-based and hybrid accounts combining syntactic and thematic agreement. Instead, we propose that SL-agreement is consistently syntactic, and that it can be accounted for by means of mechanisms that have been independently argued for in spoken language.

2. Basic facts of sign language agreement. SLs can express agreement with subject and object by means of modulation of a sign's movement (and orientation of the hand, see section 4.3 below): movement proceeds from the location associated with the subject towards the location associated with the object (in (1) loci are indicated by subscripts). What is remarkable about SL-agreement is that generally, only a subset of verbs inflect in this way. Those that do not are referred to as plain verbs (PV), cf. (1a), while those that do are called agreement verbs (AV), cf. (1b). Perhaps the biggest challenge for a syntactic account of SL-agreement are so-called backwards verbs (BAV), where agreement is expressed by movement from the object to the subject, cf. (1c):

(1) a. INDEX$_2$ ALWAYS POSS$_1$ BIRTHDAY FORGET
'You always forget my birthday.'

b. INDEX$_1$ POSS$_1$ BROTHER INDEX$_3$ $_1$VISIT$_3$
'I will visit my brother.'

c. PARTY INDEX$_1$ INDEX$_3$ $_3$INVITE$_1$
'I will invite her/him for the party.'

d. INDEX$_1$ NEIGHBOR NEW INDEX$_{3a}$ LIKE $_1$PAM$_{3a}$
'I like the new neighbor.'

Finally, in the SLs we will focus on here (mostly German Sign Language, DGS), PVs generally co-occur with a semantically empty agreement auxiliary PAM (person agreement marker), which expresses the agreement relation by means of movement and orientation, cf. (1d):

3. Against previous accounts. Since SL-agreement seems to deviate from canonical agreement in spoken languages, previous analyses of SL-agreement differ in fundamental ways from regular syntactic accounts of agreement. We will show that this is not only unnecessary but that the alternatives are confronted with serious problems a syntactic account is not.

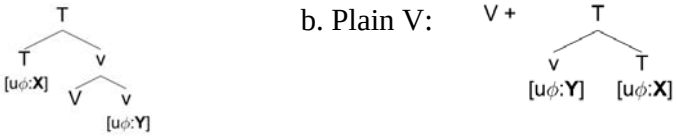
(i) According to *gesture-based accounts*, SLs make use of gestural space, i.e. the loci used in agreement are outside the grammatical system. Arguments for this position come from the fact that the relevant spatial morphemes do not have a fixed form (*listability problem*) and that the system is non-canonical according to Corbett's (2006) criteria (Schembri & Cormier 2014). However, such accounts cannot explain the interaction of SL agreement with other syntactic phenomena, such as pro drop and word order. Also, Costello (2015) has shown that the non-canonicity argument cannot be maintained. None of the gestural accounts offers an explicit analysis of language-specific patterns. Crucially, it remains mysterious how they account for the use of agreement auxiliaries in some SLs. Note finally that the listability problem can also be solved in formal accounts by assuming recursive subdivisions of the signing space (Steinbach & Onea 2015).

(ii) Meir's (2002) influential analysis is a *hybrid account* as she suggests that movement of an AV is consistently thematically determined – in both regular AV (RAV) and BAV, it proceeds from Source to Goal – while orientation is towards the syntactic object. She argues that all AV express transfer and combine with a directional morpheme DIR. There are two DIR morphemes, one for RAV and one for BAV. A serious problem of Meir's account is that, in order to avoid free combination of a verb with either of the two DIR, she has to assume that verbs are lexically specified for which DIR they combine with – something she actually wants to avoid. In addition, the existence of agreement auxiliaries is unexpected since Aux does not have any lexical content, i.e. it does not express transfer. In addition, with agreement auxiliaries, movement is always from the subject to the object. Finally, the attested synchronic and diachronic variation w.r.t. class membership is also unexpected if the verb classes are indeed semantically based.

4. Proposal. We adopt a standard Minimalist system with ϕ-probes on v and T. As a result, the ϕ-features of SU/OBJ are copied onto v/T. At PF, this is realized as path-movement from SU to OBJ.

4.1. RAVs vs. PVs. While v always moves to T, the Vs differ in whether they move up to V. RAVs do move to v so that a complex head V+v+T arises that is linearized as in (3a). PVs, however, do not so that only v+T form a complex head while V remains separate (3b):

(3) a. Agreement V: b. Plain V:



To make head-movement dependent on verb type, we adopt a greed-based view on head-movement, i.e. it is a feature of a head that triggers head-movement. The difference in V-movement has consequences for morphology in that vocabulary items are sensitive to the structural difference in (3): v is realized as zero if part of the complex head, otherwise it is realized as PAM:

(4) a. v ⇔ ∅ /__V agreement V
b. v ⇔ PAM plain V

Note that these derivations are modality-independent. The difference between PV+PAM vs. RAV is comparable to the synthetic vs. analytic difference in spoken language (apart from the fact that the split is based on lexical properties in SLs rather than formal features such as tense/aspect, voice).

4.2. BAVs. Note first that backward agreement is not indicative of a change in grammatical relations: the agent is still the syntactic subject as is shown by subject marker omission (Padden 1988). But with respect to agreement, the object is treated like the subject and vice versa. We thus propose that BAV instantiate agreement reversal (cf. Kalin & van Urk 2015 for a similar phenomenon in spoken language). We implement the reversal by means of an approach that was originally developed for ergativity (cf. Lourenço 2015 for a related idea), viz., Müller (2009), who proposes that alignment (Normal/Acc vs. Reversed/Erg) is determined syntactically by the order of operations on v, viz. Agree and Merge: different orderings lead to different alignments (5) (note than alternative approaches to ergativity and to agreement reversal may work as well):

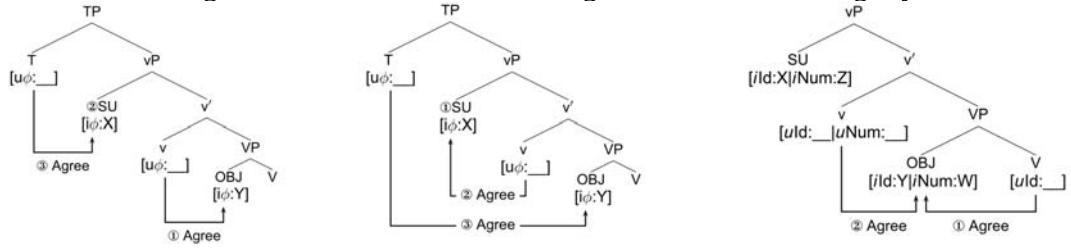
(5) Normal alignment: Agree > Merge; Reversed alignment: Merge > Agree

The derivation of normal alignment is standard, the phi-features of the SU are copied onto T and those of the OBJ onto v. In reversed alignment, however, v agrees with the SU (the SU is closer according to a path-based definition of locality) while T agrees with the OBJ, cf. (7) below. The phi-features are thus distributed differently in the two alignment types, which has consequences for the spell-out at PF: movement from SU to OBJ with RAV (6a) and from OBJ to SU with BAV (6b). Agreement reversal in SLs is a lexical property (and thus requires selection between V and v).

(6) a. T-V-v Normal/RAV b. T-V-v Reversed/BAV
SU-V-OBJ OBJ-V-SU

4.3. Agreement by orientation. Agreement by orientation is independent from agreement by movement: Not all AVs are specified for orientation, and it is consistently accusative. We propose that it results from an additional Agree operation between V and the object and is thus essentially treated like participle agreement in Romance, see (7c). Agree only involves [Ident] (rather than person, cf. Costello 2015) but not number, so that the object remains active for Agree with v.

(7) a. Normal Alignment b. Reversed Alignment c. Agr by orientation



5. Discussion. Taken together, our purely syntactic account captures the distinction of verb types, the behavior of BAV, and the use of the agreement auxiliary – employing only modality-independent mechanisms. Aren't there any modality-specific characteristics then? We would like to suggest that the combination of mechanisms is modality-specific. It is the very nature of SL-agreement, it's spatial

and iconic properties, that motivates the distinction of verb types and the existence of BAV, and which thus calls for an unusual combination of independently motivated mechanisms.

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