HPSG AND SEMANTIC AGREEMENT

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Background

For much work in HPSG, agreement between a verb and its subject and other kinds of agreement between a head and an argument are viewed as agreement with the index of the controller (see e.g. Pollard and Sag 1994, Wechsler and Zlatic 2001).

Indices are 'abstract objects that function in discourse to keep track of the entities that are being talked about, or (in the case of quantified NPs) the sets of entities that are being quantified over' (Pollard and Sag 1994: 67).

Indices are formalized as objects of type *index*, which are the value of a feature INDEX and in many languages have the features PERSON, NUMBER and GENDER, giving feature structures of the following form:

(1)

$$\begin{bmatrix} \text{INDEX} \begin{bmatrix} \textit{index} \\ \text{PERSON} \ldots \\ \text{NUMBER} \ldots \\ \text{GENDER} \ldots \end{bmatrix} \end{bmatrix}$$

The index of an expression reflects the properties of the entity or entities to which it is 'anchored'. But there may be complications, e.g. grammatical gender, which may not have much to do with the properties of associated the entity or entities, and an expression like *yours truly*, which refers to the speaker but is clearly third person.

(2) Your truly is going to be there.

Certain NPs allow different INDEX possibilities.

(3) The dog keeps chasing his/her/its tale.

(4) The ship looked splendid as she/it entered the harbour.

(5) The government is/are setting new wage standards.

(6) a. The hash browns at table nine are getting cold.
b. The hash browns at table nine is getting restless.

(7) Fish and chips is/are my favourite meal.

(8) A mother and (a) wife knows this. (Chaves 2007: 181)

An NP may be morphologically singular with a plural index (5) or morphologically plural with a singular index (6b).

Speakers may employ a new index for an old referent.

(8) The Senate has just voted itself another raise. Most of them were already overpaid to begin with. (Pollard and Sag 1994: 72)

But binding requires the same index.

(9) a. The faculty is voting itself a raise.
b. The faculty are voting themselves a raise.
c. *The faculty is voting themselves a raise.
d. *The faculty are voting itself a raise. (Pollard and Sag 1994: 71)

For much work in HPSG the difference between syntactic agreement and semantic agreement is a difference between two kinds of index agreement.

But an issue arises where an NP triggers more than one kind of agreement within a limited domain, e.g. examples like (10) discussed by Bender and Flickinger (1999: 212) and AAVE examples like (11) discussed by Levine (2010).

(10) Everyone wins, don't they?

(11) John and Mary's ass is making theyself mad.

Such examples lead Bender and Flickinger (1999) and Levine (2010) to propose that subject-verb agreement at least in some languages involves not the INDEX feature but a separate feature, which they call AGR.

Assuming that there is CONCORD feature responsible for NP internal agreement in number, gender and case, controllers have three different agreement-related features on this view.

Numerals

The basic facts about numerals, as exemplified by (12) and (13), seem unproblematic.

(12)	os	i‹w›di-li	i‹w›di-t'u	łib-aw	kulu	lo	(=(1))
	one	‹I.SG›be.PST-EVID	‹I.SG›be.PST-NEG	three-I.SG	orphan	lad(I)[SG.ABS]	

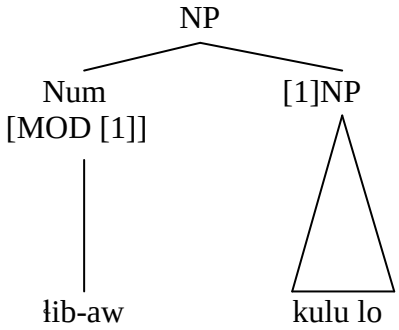
'Once upon a time there were three orphan boys.'

(13)	os	e‹b›di-li	e‹b›di-t'u	łib-aw	kulu	lo	(=(2))
	one	‹I/II.PL›be.PST-EVID	‹I/II.PL›be.PST-NEG	three-I.SG	orphan	lad(I)[SG.ABS]	

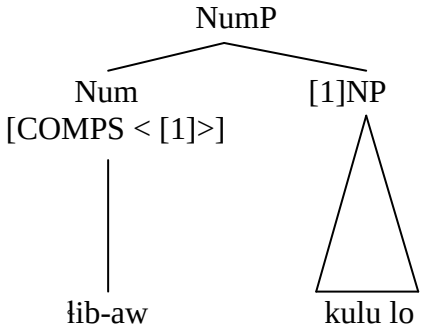
'Once upon a time there were three orphan boys.'

The numeral might be a non-head modifying a nominal head (13) or a head taking a nominal complement (14).

(14)



(15)



On the first analysis, the MOD value of the numeral ensures that it combines with a singular nominal constituent. On the second analysis, the COMPS value of the nominal does this.

On the first analysis the numeral will be singular through agreement with the nominal just as a modifying adjective is. On the second analysis, the fact that the numeral is singular probably needs to be stipulated.

From the standpoint of much work in HPSG, it is natural to see the two possibilities for agreement as reflection of the possibility of two different indices stemming from the fact that group can be viewed as a single entity or a number of entities.

(16)

$$\begin{bmatrix} \text{INDEX} \begin{bmatrix} \textit{index} \\ \text{NUMBER } \textit{sing} \\ \text{GENDER.} \textit{i} \end{bmatrix} \end{bmatrix}$$

(17)

$$\begin{bmatrix} \text{INDEX} \begin{bmatrix} \textit{index} \\ \text{NUMBER } \textit{plur} \\ \text{GENDER.} \textit{i/ii} \end{bmatrix} \end{bmatrix}$$

On this approach, the difference between (12) and (13) is not a difference between syntactic agreement and semantic agreement but a difference between two kinds of index agreement.

If the noun in a numeral + noun structure is non-human, only singular agreement is possible. Some constraint referring to the semantic interpretation will be necessary to prevent this.

An issue arises with the following data:

(18) nen q’ˤwe‹r›u q’oc’o-li q’iˤjdi-li (=(5))
1PL.EXCL[ABS] two‹II.SG› [1PL]reconcile.PFV-CVB [1PL]sit.PFV-EVID
‘we two (girls) had made up (by then) and were sitting there...’ (literally: ‘we two having reconciled were sitting’)

(19) nen q’ˤwe‹r›u do-q’c’o-li q’a‹r›di-li (=(6))
1PL.EXCL[ABS] two‹II.SG› II.SG-reconcile.PFV-CVB ‹II.SG›sit.PFV-EVID
‘we two (girls) had made up (by then) and were sitting there...

(20) nen q’ˤwe‹r›u do-q’c’o-li q’iˤjdi-li (=(7))
1PL.EXCL[ABS] two‹II.SG› II.SG-reconcile.PFV-CVB [1PL]sit.PFV-EVID
‘we two (girls) had made up (by then) and were sitting there...

(21) *nen q’ˤwe‹r›u q’oc’o-li q’a‹r›di-li (=(8))
1PL.EXCL[ABS] two‹II.SG› [1PL]reconcile.PFV-CVB ‹II.SG›sit.PFV-EVID
*‘we two (girls) had made up (by then) and were sitting there...

These examples appear to involve two nominal constituents in an apposition relation, the first plural and the second morphologically plural but presumably able to have either a singular or plural index.

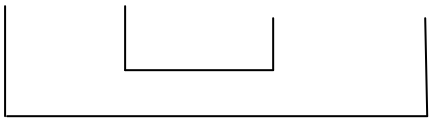
The first verb is a converb and the second is the main verb. Both verbs can be plural (18), both verbs can be singular (19), or the first verb can be singular and the second plural (20). It is not possible for the first verb to be plural and the second singular (21).

Where both verbs are plural, they could be agreeing with either nominal constituent.

Where one is singular, it must be agreeing with the second nominal constituent.

(20) may involve the following agreement relations:

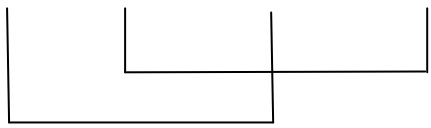
(22) nen q’ˤwe‹r›u do-q’c’o-li q’iˤjdi-li



If so, it does not involve a single controller triggering two kinds of agreement.

The ungrammatical (21) probably involves the following relations:

(23) nen q’ˤwe‹r›u q’oc’o-li q’a‹r›di-li



It is not obvious how the contrast should be accounted for if agreement applies to constituent structures, which are unordered, as I have assumed in earlier work.

The contrast between (20) and (21) might be understandable if the numeral and the converb formed a constituent, but the converb presumably forms a constituent with the main verb.

Conceivably (21) is really grammatical but is unacceptable for some performance-related reason, but it would take a lot to establish this.

- It would be good to know whether an example like (20) without *nen* is acceptable since such an example would involve a single controller triggering two kinds of agreement.

Conjunction

Apart from the rather special cases where there is agreement with a conjunct, agreement with a conjoined phrase seems a fairly straightforward matter of semantics.

It is not clear to me that it is necessary to refer to conjuncts here. Instead of (24) one might have (25).

(24) If there is a conjunct referring to a human, use gender I/II agreement.

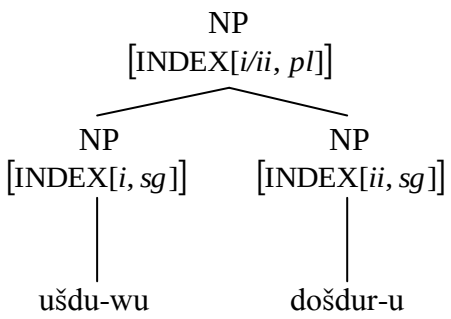
(25) If one member of the set referred to by the conjoined phrase is a human, use gender I/II agreement.

Within HPSG each conjunct will have an index mainly reflecting its semantic properties and so will the conjoined phrase.

The conjoined phrase in (26) will have the schematic analysis in (27).

(26) ušdu-wu došdur-u χˤe e‹b›t:i-li (=(9))
brother(I)[SG.ABS]-and sister(II)[SG.ABS]-and cold ‹I/II.PL›become.PFV-EVID
'Brother and sister got cold.'

(27)



The following will have similar analyses:

(28) χˤe e‹b›t:i-li ušdu-wu došdur-u (=(10))
cold ‹I/II.PL›become.PFV-EVID brother(I)[SG.ABS]-and sister(II)[SG.ABS]-and
'Brother and sister got cold.'

(29) zari Aħma:d-u Moħomma:d-u χir a‹b›u (=(11))
1SG.ERG PN(I)[SG.ABS]-and PN(I)[SG.ABS]-and behind ‹I/II.PL›do.PFV
'I brought Akhmed and Magomed.'

(30) χir a‹b›u zari Aħma:d-u Moħomma:d-u (=(12))
behind ‹I/II.PL›do.PFV 1SG.ERG PN(I)[SG.ABS]-and PN(I)[SG.ABS]-and
'I brought Akhmed and Magomed.'

(31) χalq'-u dogi-wu ɬ:^{w}ak b-i (=(18))
people(III)[.SG.ABS]-and donkey(III)[NOM.SG]-and near I/II.PL-be.PRS
'The people and the donkey are near.' (Kibrik 1977:187)

A full account of the data would require an account of the semantics of conjoined phrases.

- It would be interesting to know if Archi has examples like (7).

Disjunction

It is not clear that plural agreement with the disjunctive NPs in (32) and (33) should really be viewed as semantic agreement.

(32) wa-ra-k Rasul-i Pat'i-ri χir a‹b›u-qi (=(19))
2SG-CONT-LAT Rasul(I)[SG.ABS]-or PATI(II)[SG.ABS]-or behind ‹I/II.PL›make-FUT
'Shall I bring to you Rasul or Patimat?' (context: a grandmother agrees to look after only one grandchild at a time).

(33) wa-ra-k χir a‹b›u-qi Rasul-i Pat'i-ri (=(20))
2SG-CONT-LAT behind ‹I/II.PL›make-FUT Rasul(I)[SG.ABS]-or PATI(II)[SG.ABS]-or
'Shall I bring to you Rasul or Patimat?'

If (34) is true, we know that one of the singular sentences in (35) and (36) is true. We do not know whether the plural sentence in (37) is true.

(34) Either Kim or Lee knows the answer.
(35) Kim knows the answer.
(36) Lee knows the answer.
(37) Kim and Lee know the answer.

This may be why speakers preferred variants where the verb agrees with one of the arguments.

Nominal predicates

Nominal predicates appear to provide one case where the domain that is relevant to agreement has more than one absolutive.

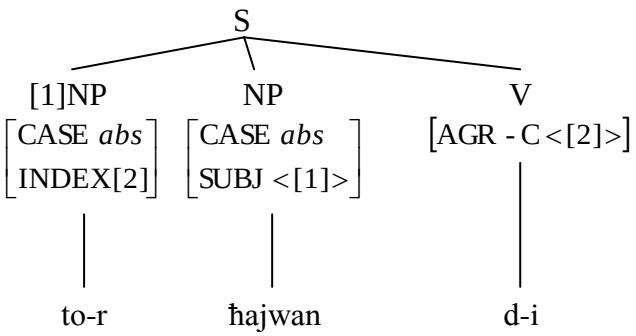
In (38) the agreement is with the subject, whereas in (39) it is with the predicate nominal.

(38) to-r ħajwan d-i (=(32))
that-II.SG.ABS animal(III)[SG.ABS] II.SG-be.PRS
She's an animal (pejorative)

(39) to-r halhaʁ-du-b č'an b-i (=(33))
that-II.SG.ABS real-ATTR-III.SG sheep(III)[SG.ABS] III.SG-be.PRS
'She is a real sheep.' (= she is very stupid)

Assuming ideas about agreement developed in earlier work, these can be represented schematically as follows:

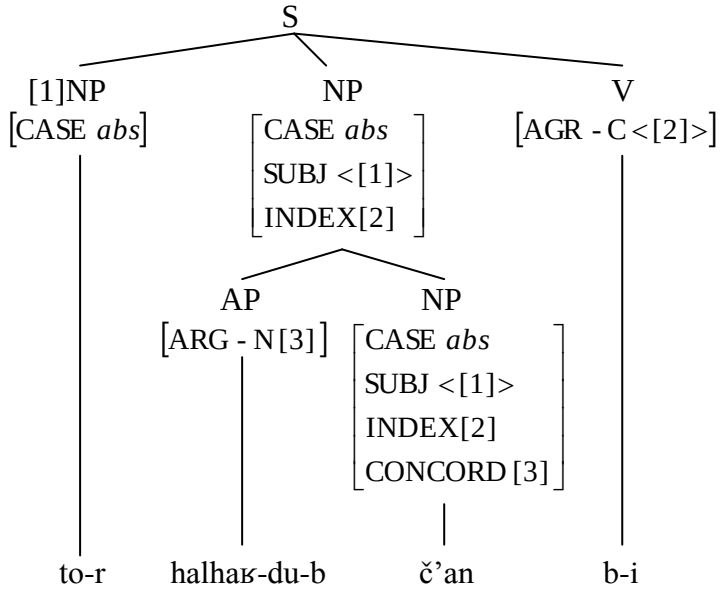
(40)



AGR-C = AGR-CLAUSAL (a feature encoding agreement within clauses)

[2] = NUMBER *sing*, GENDER *ii*

(41)



AGR-N = AGR-NOMINAL (a feature encoding agreement within NPs)

[2] = NUMBER *sing*, GENDER *iii*

$$[3] = \begin{bmatrix} \text{NUMBER } \textit{sing} \\ \text{GENDER } \textit{iii} \end{bmatrix}$$

The data seems unproblematic for the informal constraint proposed in earlier work.

(42) An agreeing element agrees with an absolutive argument which is a sister.

However, this needs to be formalized in a way that requires agreement with **one** absolutive sister and not with **all** absolutive sisters. This remains to be done.

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