

## LEXICAL ENTRIES IN ARCHI: HPSG APPROACH

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### Inflecting and non-inflecting adjectives (1.1.)

There are a number of possible approaches within HPSG to situations where some members of a lexical class show agreement and others do not.

Assuming that agreement is encoded by an AGR feature, whose value is normally an index, there are at least the following possibilities.

- The AGR feature is present with a normal value but it is not realized
- The AGR feature is present but has the special value *none*
- The AGR feature is absent.

On the first approach non-inflecting items have the same feature makeup as inflecting items, but they must be distinguished in some way for the morphological rules to apply correctly and to allow an account of any syntactic differences.

On the second approach agreement applies when an item is [AGR *index*].

On the third approach agreement applies when an item has AGR.

I will assume the second approach.

1.1.2 and 1.1.3 suggest that non-inflecting adjectives and inflecting adjectives do not differ with respect to word order.

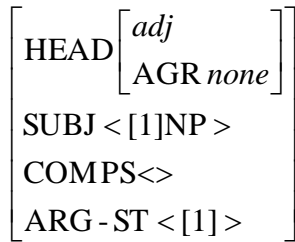
But ‘at least some uninflecting adjectives can serve as predicates without the copula’, as in (1).

(1) zon        o<sup>ʃ</sup>ro<sup>ʃ</sup>s        (4)  
    1SG.ABS   Russian  
    ‘I am Russian.’

If all uninflecting adjectives can serve as predicates without the copula, then we can say that an adjective can serve as a predicate without the copula just in case it is [AGR *none*]. (If only some uninflecting adjectives have this property, a different approach will be necessary.)

*o<sup>ʃ</sup>ro<sup>ʃ</sup>s* will have the following category:

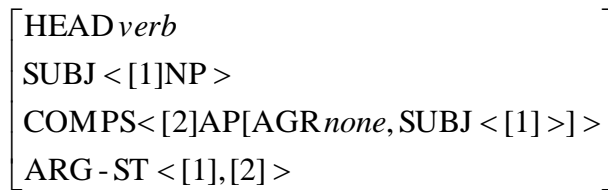
(2)



There are various possible sentences within HPSG for sentences where a non-verbal predicate appears without the copula.

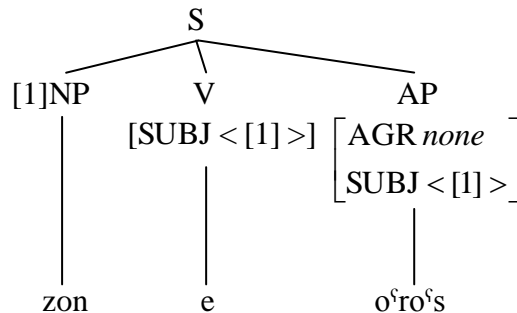
One is an analysis with a phonologically null copula with the following category:

(3)



Assuming that verbs take all their arguments as sisters, (1) will have the structure in (3) (where S is VP[SUBJ <>]) on this analysis.

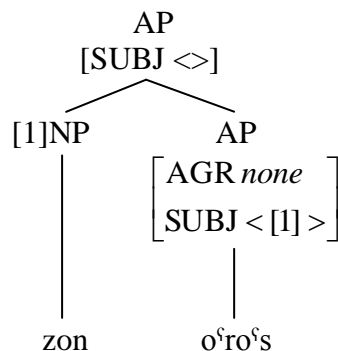
(3)



This approach seems most appropriate for languages in which the copula can or must be absent in a broad class of situations. It seems less appropriate in which the copula can only be absent in quite specific circumstances.

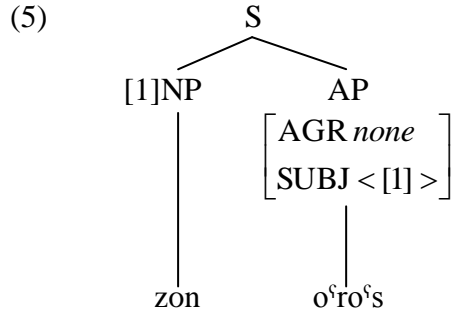
An alternative analysis is one in which the predicate combines directly with its subject and is the head of the resulting structure:

(4)



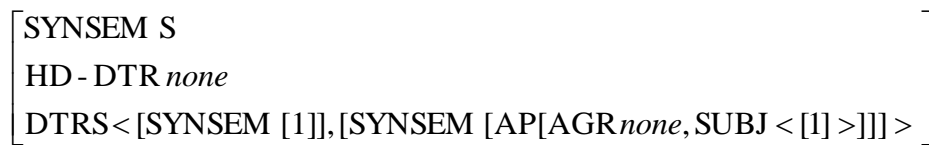
Assuming adjectival clauses have the same distribution as standard verbal clauses, this is not a tenable analysis.

A better alternative is a headless analysis.



This requires a clause type subject to an appropriate constraint as follows:

(6) *headless-clause* →



### Quantifying words (1.1.4.)

It seems that some quantifying words modify a following nominal constituent rather like attributive adjectives.

*Čeħ* ‘not one’ is a negative quantifier co-occurring with a negative verb, suggesting that Archi has negative concord.

(7) *čeħ*    *adam-li-s*                    *sin*    *e<r>t:i-li*                                    *d-i-t'u*  
 not.one person(IV)-OBL-DAT know <II.SG>become.PFV-EVID <II.SG>-be.PRS-NEG  
*jamu-r*    *lo*                                    (15)  
 that-II.SG girl(II)[SG.ABS]  
 ‘Not one person recognised that girl.’

Something like the following category seems appropriate for *čeħ*:

(8)

|        |                     |
|--------|---------------------|
| HEAD   | <i>quantifier</i>   |
|        | AGR - N <i>none</i> |
|        | MOD NP[INDEX[1]]    |
| SUBJ   | <>                  |
| COMPS  | <>                  |
| ARG-ST | < NP[INDEX[1]] >    |

AGR-N is a feature which encodes agreement between a modifier and the nominal it modifies. It has the value *none* here because quantifiers do not show agreement. MOD is a feature which indicates what a modifier modifies. I assume that the modified NP is coindexed with the unexpressed argument of the adjective.

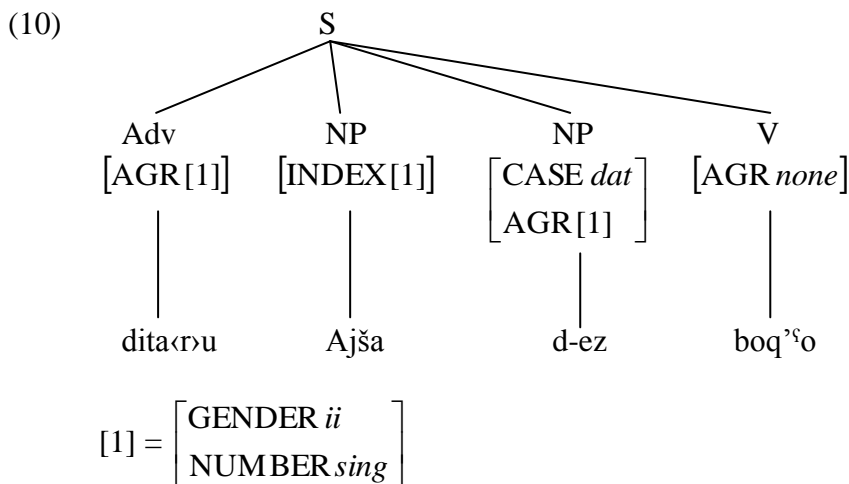
### Agreeing vs. non-agreeing verbs (1.2.)

I assume that non-agreeing verbs like non-agreeing predicative adjectives are [AGR *none*].

The fact non-verbal targets show agreement in the clause headed by the non-agreeing verb such as (9) does not require non-agreeing verbs to have standard agreement features.

(9) dita<ru      Ajša      d-ez                      boq'co                      (19)  
     <II.SG>early   aisha   II.SG-1SG.DAT   return.PFV  
     'Aisha returned to me early.'

This will have the following structure:



There is no problem about a verb being [AGR *none*] while some of its sisters have a normal value for AGR.

### Attributive (1.3.)

For HPSG, attributive modifiers of various kinds, including adjectives and relative clauses, are [MOD NP].

The modifiers in (11) and (12) will have the categories in (13) and (14).

(11)  $\dot{\text{t}}\text{:enneq}^{\text{f}}\text{-du-t}$   $\chi\text{aby}\dot{\text{i}}$  (20)  
 river(IV).SG.OBL-INTER-ATTR-IV.SG fish(IV)[SG.ABS]  
 ‘fish which is in the river’

(12)  $\dot{\text{s}}\text{ut:a-t:u-t}$   $\text{baraznik}$  (21)  
 tomorrow-ATTR-IV.SG festival(IV)[SG.ABS]  
 ‘tomorrow’s festival’

(13)

$$\left[ \begin{array}{l} \text{HEAD} \left[ \begin{array}{l} \textit{noun} \\ \text{CASE } \textit{obl - inter} \\ \text{AGR - N } \textit{none} \\ \text{MOD NP}[\text{INDEX}[1]] \end{array} \right] \\ \text{SUBJ } \langle \rangle \\ \text{COMPS} \langle \rangle \\ \text{ARG - ST } \langle \text{NP}[\text{INDEX}[1]] \rangle \end{array} \right]$$

(14)

$$\left[ \begin{array}{l} \text{HEAD} \left[ \begin{array}{l} \textit{adverb} \\ \text{AGR - N } \textit{none} \\ \text{MOD NP}[\text{INDEX}[1]] \end{array} \right] \\ \text{SUBJ } \langle \rangle \\ \text{COMPS} \langle \rangle \\ \text{ARG - ST } \langle \text{NP}[\text{INDEX}[1]] \rangle \end{array} \right]$$

Presumably both  $\dot{\text{t}}\text{:enneq}^{\text{f}}\text{-du-t}$  in (11) and  $\dot{\text{s}}\text{ut:a-t:u-t}$  in (12) are predicative expressions, i.e. that they could appear as complements of the copula.

If this is right, they can be derived from their predicative counterparts by a lexical rule of the following form:

(15)  $[\text{SUBJ } \langle \text{NP}[\text{INDEX}[1]] \rangle] \Rightarrow \left[ \begin{array}{l} \text{HEAD} \left[ \begin{array}{l} \text{AGR - N } \textit{none} \\ \text{MODNP}[\text{INDEX}[1]] \end{array} \right] \\ \text{SUBJ } \langle \rangle \end{array} \right]$

I am assuming that derived attributive modifiers are [AGR-N *none*]. If this is not correct, the lexical rule will need to be modified.

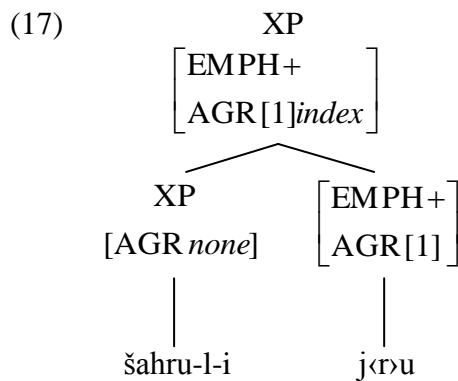
### Emphatic particle (1.4.)

It seems that the emphatic particle (in bold in (16)) can attach to any clausal constituent, and in addition to its emphatic effect creates a constituent which agrees with the absolutive in the clause.

- (16)  $\chi$ ara-š  $\chi$ it:a jamu-r laha-t:i-š jamum do<sup>s</sup>:zu-b  
 back-EL then this-II.SG girl(II).SG.OBL-SUP-EL that.III.SG big-III.SG  
 šahru-l-i-**j<r>u** c'or oq'a-t:u-r  
 town(III)-OBL-IN-EMPH<II.SG> name(IV)[SG.ABS] [IV.SG]go.PFV-ATTR-II.SG  
 ʔ:onnol e<r>t:i-li (22)  
 woman(II)[SG.ABS] <II.SG>become.PFV-EVID  
 'Then this girl became a woman known to all in that very big city(T32:23).'

For HPSG a basic question is whether the particle is a sign with phonological syntactic and semantic properties combining with another sign or just a piece of morphology on some word (the position generally assumed for Romance clitics and English possessive -'s).

If it is a sign, we will have structures of something like the following form:

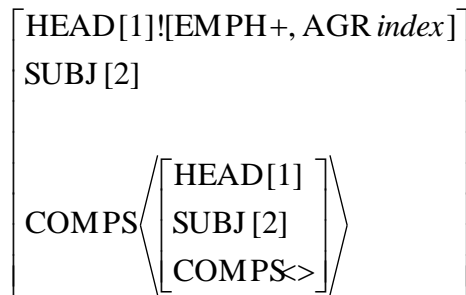


The larger phrase must have most of the properties of the smaller phrase but be marked in some way as emphatic and be identified as an agreeing constituent.

One way to implement such an analysis is to treat the emphatic particle as a weak head, one which inherits most of its properties from its complement (Tseng 2002).

We might assume the following category for the emphatic particle, where, following Sag (2012), F1 [1]![...]. F2 [1] means that F1 has the same value as F2 except for the properties specified in [...]:

(18)



If the emphatic particle is just a piece of morphology, a central question is whether it appears on the head of the associated phrase or at its edge. In the former case the head needs to reflect the fact that the phrase is [EMPH +] and [AGR *index*]. In the latter case the final element needs to do this.

An obvious question here is whether the emphatic particle can combine with an agreeing constituent. If so, one might expect agreement to be realized twice.

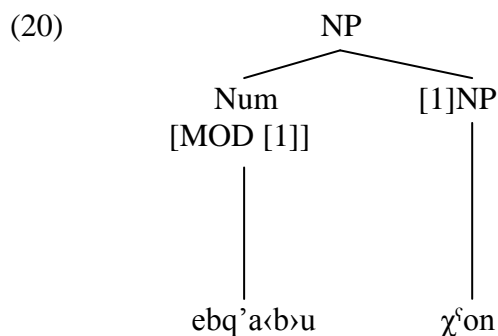
## 2.1. Numerals

Numerals, such as *ebq'a<b>u* in (18), seem to be modifiers of a following nominal constituent like adjectives and some quantifiers.

- (19) *ebq'a<b>u*     $\chi^{\circ}$ on                      a<b> $\chi$ u-li                      b-i                      (26a)  
four<III.SG>    cow(III)[SG.ABS]    <III.SG>sleep-CVB    III.SG-be.PRS  
'Four cows are asleep.'

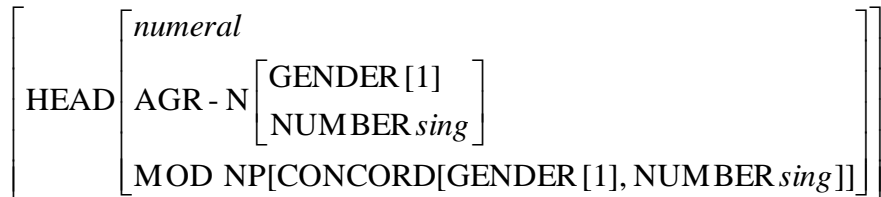
The fact that case is realized on the nominal suggests that it is head.

This suggests that *ebq'a<b>u*  $\chi^{\circ}$ on has the following schematic structure.



Numerals can be assigned the following category:

(21)



AGR-N encodes agreement between a modifier and a nominal and CONCORD encodes the properties of the nominal relevant to this agreement.

The category ensures that numerals are singular and modify a singular NP which they agree with in gender.

### New example for semantic agreement

The higher verb in (22) shows the expected singular agreement but the lower verb shows plural agreement.

- (22) jamu libaw qačarɁ bji<w>Ɂ:u-li be-q'e-s  
that.I.SG three.I.SG robber(I)[SG.ABS] start.<I.SG>-PFV-EVID I/II.PL-go-FIN  
gurži-t:-e-q:a-ši xos x'amlis a-s (28)  
Georgian-PL-OBL.PL-INTER-ALL property(IV)[SG.ABS] pilfer IV.SG.do-FIN  
'These three bandits intended to go to Georgia to pilfer (lit.: started going to Georgia).  
(T22:6)'

Examples like the following suggest that binding requires the same index:

- (23) 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)

However, speakers may employ a new index for an old referent.

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

(22) suggests that control is not an instance of binding and that the unexpressed subject of the lower verb may have a different index from the controller.

Partial control as in (25) (Culicover and Jackendoff 2005: 460) suggests that control doesn't necessarily require the same index.

- (25) John wanted to meet at six.

If acceptable, the following would be similar to (22):

- (26) ?The government expects to please themselves



## 2.2. Nouns which take different agreement

It seems that a modifier of *χalq* ‘people’ can be either singular, as in (27), or plural, as in (28).

(27) *tej-me-n*                      *lap χ:‘on-nu-b*                      *χalq’*                      *b-i*                      (29)  
that.PL-OBL.PL-GEN    very be.bad-ATTR-III.SG    people(III)[SG]    III.SG-be.PRS  
‘They are a very wicked people (nation).’ (lit.: ‘to them there are wicked people’)

(28) **gid-ib** *χalq’-li*                      *tama:ša*                      *bu-š:u-r-ši*                      *b-i*                      (30)  
that-PL    people(III)-SG.ERG    surprise(III)[SG.ABS]    III.SG-take-IPFV-CVB    III.SG-be.PRS  
‘These people are surprised.’

Assuming that agreement on a nominal modifier is a reflection of the nominal’s CONCORD feature, *χalq*’ must be [CONCORD [NUMB *sing*]] in (27) but [CONCORD [NUMB *plur*]].

Assuming that clausal agreement involves the nominal’s INDEX feature, *χalq*’ must be [INDEX [NUMB *sing*]] in (27). It is not clear what the INDEX feature of *χalq* should be in (28).

## REFERENCES

- Culicover, P. W. and R. Jackendoff (2005), *Simpler Syntax*, Oxford: Oxford University Press.  
Pollard, C. and I.A. Sag (1994), *Head-driven Phrase Structure Grammar*, Chicago: University of Chicago Press.  
Sag, I. A. (2012), Sign-Based Construction Grammar: An informal synopsis, in H. C. Boas and I. A. Sag (eds.) 2012, *Sign-Based Construction Grammar*, Stanford: CSLI Publications, pp. 69-202.  
Tseng, J. (2002), Remarks on marking, in F. van Eynde et al. (eds), *HPSG 2001: Proceedings of the 8th International Conference on Head-Driven Phrase Structure Grammar*, pp. 267-283. CSLI Publications.