

## Agreement patterns and coordination in Lexical Functional Grammar

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Coordination and its interactions with agreement have been a focus of research in LFG over the past decade (Dalrymple & Kaplan, 2000; King & Dalrymple, 2004; Dalrymple et al., 2006; Sadler, 1999, 2003, 2006; Arnold et al., 2007), though an account that captures the full range of agreement patterns in an elegant manner has proved elusive. Many previous proposals account for patterns of feature resolution but do not extend to single-conjunct agreement (Dalrymple & Kaplan, 2000; King & Dalrymple, 2004; Dalrymple et al., 2006; Sadler, 2006). Other proposals address single-conjunct agreement, but provide an account of standard resolution patterns that is less than satisfying. We provide a means of stating a typology of agreement patterns that handles resolution and single-conjunct agreement as well as agreement requirements that apply in an across-the-board fashion to all of the conjuncts of a coordinate phrase. We rely on the standard distinction between CONCORD and INDEX features, treating them both as syntactic features represented at f-structure (Wechsler & Zlatić, 2003). We follow King & Dalrymple (2004) in treating INDEX in coordinate structures as a nondistributive (resolving) feature and CONCORD as distributive. Previous literature has not been explicit about what features are active when a target agrees with only one conjunct.

A number of Serbian/Croatian nouns have mismatched CONCORD and INDEX features: for example, *deca* ‘children’ and *unučad* ‘grandchildren’ have FemSg CONCORD but NeutPl INDEX. We can use Serbian/Croatian nouns with mismatched CONCORD and INDEX features to demonstrate the existence of at least the following agreement patterns.

- Agreement with resolved INDEX features:

(1) *Deca i unučad koja/koji su došli-a/došli-i su gladn-a/gladn-i hungry-NeutPl/hungry-MascPl*  
children and grandchildren who.NeutPl/who.MascPl AUX.3PL come-NeutPl/come-MascPl be.3PL  
hungry-NeutPl/hungry-MascPl  
‘The children and grandchildren who came are hungry.’ [web/informant]

The MascPl agreement option on the relative pronoun, the verb and the adjective must be resolved agreement over the NeutPl INDEX features of the conjuncts, since resolved agreement involving FemSg conjuncts would give FemPl, and everything else, including neuter, resolves to MascPl. NeutPl agreement is closest-conjunct agreement, also illustrated in (2).

- Agreement with INDEX features of the closest conjunct:

(2) *Tinejdžeri i deca koja preglasno i prečesto slušaju muziku ...*  
Teenagers.MascPl and children who.NeutPl too.loudly and too.often listen.to music ...  
‘Teenagers and children who listen to music too loudly and too often...’ [web]

‘Teenagers’ has MascPl CONCORD and INDEX. The relative pronoun shows closest-conjunct agreement with the NeutPl INDEX features of the closest conjunct. Closest-conjunct CONCORD agreement would be FemSg, and resolved agreement would be MascPl.

- Agreement with the concord features of each conjunct (distributive concord agreement):

(3) *porodicu i decu koju imate u Australiji*  
family.FemSgAcc and children.FemSgAcc who.FemSgAcc you.have in Australia  
‘family and children whom you have in Australia’ [web]

‘Family’ has FemSg CONCORD and INDEX. The relative pronoun shows FemSg agreement with both conjuncts; resolved agreement would be FemPl for the CONCORD feature, and MascPl for INDEX. All examples of this type which we have collected involve uniform CONCORD features of the conjuncts.

- Agreement with the concord features of the closest conjunct:

- (4) sve njegove molbe i uveravanja ni-su pomagali ništa  
 all.FemPl his.FemPl prayers.FemPl and assurances.NeutPl Neg-PL helped.MascPl nothing  
 ‘All his prayers and assurances did not help at all.’  
 (Corbett 1979, 206; Corbett 1991, 283)

Although there are no concord/index mismatches in this example, we argue on the basis of agreement patterns with mismatched nouns that attributive agreement (‘all’, ‘his’) is with the concord features of the initial conjunct. Following Kuhn & Sadler (2007), we propose to handle these agreement patterns by defining functional metavariables to allow reference to peripheral conjuncts in a coordinate phrase. We adopt Kuhn & Sadler’s notation  $f_L$  and  $f_R$ , but define them differently:

$$(5) f_{(L)} \equiv f \begin{matrix} \in^* \\ \neg[(\leftarrow \in) \leftarrow f \rightarrow] \end{matrix}$$

$f_{(L)}$  is an f-structure possibly embedded within  $f$  as a conjunct in a coordinate set. If  $f_{(L)}$  is embedded as a member of  $f$ , it must be the leftmost member: this is accomplished by the off-path constraint, which states that there may not be any (other) members of the coordinate structure that f-precede  $f_{(L)}$ .

The definition of  $f_{(R)}$  is similar except for reversed f-precedence requirement on the other conjuncts. The definitions of  $f_L$  and  $f_R$  add the requirement that the f-structure that is the target of agreement must not itself be a coordinate structure:

$$(6) f_L \equiv f \begin{matrix} \in^* \\ \neg[(\leftarrow \in) \leftarrow f \rightarrow] \end{matrix} : \neg(f_L \in)$$

Like Kuhn & Sadler, we encode agreement requirements lexically. (7) gives the lexical entry for the Serbian/Croatian possessive determiner *njegove* ‘his’, which shows obligatory closest-conjunct CONCORD agreement, agreeing either with a noncoordinated noun or with the left conjunct of a coordinate structure:

$$(7) \text{njegove ‘his’} : \begin{matrix} (\uparrow_L \text{ CONCORD GEND}) = \text{F} \\ (\uparrow_L \text{ CONCORD NUM}) = \text{PI} \end{matrix}$$

Our approach contrasts with Kuhn & Sadler (2007), who require features to be assigned to exactly one classification, and to behave uniformly as that classification requires. The main difficulty with this proposal is the existence of optional single-conjunct agreement. A classification of features entails that a feature will always behave in a certain way: always requiring resolved agreement, for example, or always requiring single-conjunct agreement. However, either closest-conjunct or resolved INDEX agreement is possible for example (1), showing that the INDEX feature can participate in both single-conjunct agreement and resolved agreement in the same construction, which is unexpected on Kuhn & Sadler’s view.

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