Control into selected conjuncts

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Introduction

A problem arises when categories corresponding to grammatical functions which prototypically differ with respect to the closed/open classification are coordinated, as in (1), an example from Polish:
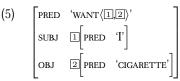
(1) Chcę pić   i   papierosa.
     want drink.INF and cigarette.ACC
     'I want to drink and (I want) a cigarette.'   (Kallas 1993, p. 123, ex. (102))

Arguments from case transmission given in Przepiórkowski and Rosen 2005 show that functional control – not anaphoric control – is involved in Polish subject control. It follows that, without coordination, the infinitival conjunct by itself would be a prototypical instance of XCOMP, an open grammatical function; this is shown in (3), which corresponds to (2). By contrast, the nominal conjunct in (1) would typically be classified as an OBJ, a closed grammatical function – see the f-structure for (4) in (5).

(2) Chcę pić.   (4) Chcę papierosa.
     want drink.INF   want cigarette.ACC
     'I want to drink.'   'I want a cigarette.'

(3) $\begin{bmatrix} \text{PRED} & \text{'WANT}\langle\boxed{1},\boxed{2}\rangle\text{'} \\ \text{SUBJ} & \boxed{1}\begin{bmatrix} \text{PRED} & \text{'I'} \end{bmatrix} \\ \text{XCOMP} & \boxed{2}\begin{bmatrix} \text{PRED} & \text{'DRINK}\langle\boxed{1}\rangle\text{'} \\ \text{SUBJ} & \boxed{1} \end{bmatrix} \end{bmatrix}$ (5) $\begin{bmatrix} \text{PRED} & \text{'WANT}\langle\boxed{1},\boxed{2}\rangle\text{'} \\ \text{SUBJ} & \boxed{1}\begin{bmatrix} \text{PRED} & \text{'I'} \end{bmatrix} \\ \text{OBJ} & \boxed{2}\begin{bmatrix} \text{PRED} & \text{'CIGARETTE'} \end{bmatrix} \end{bmatrix}$

The first problem is to decide on a common grammatical function for the coordinate phrase in (1), the other is to establish control relations appropriately – the nominal conjunct cannot be controlled (there is nothing to be controlled), while the infinitival conjunct must be controlled.

Choosing a common grammatical function

It was suggested during the OBJ vs COMP debate (e.g., Dalrymple and Lødrup 2000, Alsina *et al.* 2005) that COMP is unnecessary as it distorts the distinction between f-structure and c-structure: COMP is defined as the grammatical function assigned to clausal complements. But since clausal complements can be coordinated with uncontroversial nominal objects (see (6)), they should – at least in some cases – also bear the grammatical function OBJ, and their clausal categorial status should be ensured by other constraints.

(6) Pat remembered [the appointment] and [that it was important to be on time].

                                              (Dalrymple and Lødrup 2000, ex. (5) = Sag *et al.* 1985, ex. (123a))

A similar argument can be advanced against XCOMP (Alsina *et al.* 2005, p. 41). Since XCOMP is used for infinitival complements, c-structure information has a direct reflection in f-structure and coordination such as in (1) shows that perhaps this grammatical function is not only unnecessary but also causes a serious problem under the standard LFG approach to coordination, where conjuncts in a coordinate phrase correspond to the same grammatical function. Let us therefore assume that the common grammatical function assigned to the coordinate phrase in (1) is OBJ and that, in principle, control into OBJ is allowed here, similarly to the possibility of control into SUBJ in Balinese, convincingly argued by Arka and Simpson 1998.

Establishing control appropriately

In order to account for (1), the matrix subject must control the subject of the infinitival, without attempting to control the subject of the nominal conjunct, as the noun in (1) does not take a subject. Since the assignment of grammatical functions is distributive, this cannot be achieved using constraints such as in (7) – the control equation would also distribute to the nominal conjunct, resulting in a violation of the coherence condition.

(7) $(\uparrow \text{SUBJ}) = (\uparrow \text{OBJ SUBJ})$

Another idea is to use off-path constraints to check the category of the conjuncts and use the relevant control equation only with infinitival conjuncts:

(8) $(\uparrow \text{OBJ} \quad\quad\quad\quad\quad\quad \text{PRED} \quad\quad\quad\quad\quad\quad\quad\quad)$
     $[(\leftarrow \text{CAT}) =_c \text{INF} \ \wedge \ (\leftarrow \text{SUBJ}) = ((\text{OBJ} \leftarrow) \text{SUBJ})] \ \vee \ (\leftarrow \text{CAT}) \neq \text{INF}$

This solution, however, does not work since off-path constraints are non-constructive by definition – they cannot introduce new attribute-value pairs to the f-structure, they can only act as constraining equations.

There is, however, an alternative solution which takes a slightly different approach to control – instead of using a control equation such as in (7), its modified version in (9) uses a new attribute, e.g., CONTROLLER:

(9) $(\uparrow \text{SUBJ}) = (\uparrow \text{OBJ CONTROLLER})$

Placed in the lexical entry of the controlling verb, (9) introduces the attribute CONTROLLER – whose value is the f-structure of SUBJ of this verb – into the f-structure of OBJ of this verb. As a result, the f-structure of the subject of the main verb is available in the f-structure of the object of this verb. If needed, this information can be used for establishing control.

In order to account for (1), the following c-structure rules are needed:

(10) ARG1 $\rightarrow$ INFP Conj NP
$\qquad\qquad\qquad$ $\downarrow\in\uparrow$ $\qquad$ $\downarrow\in\uparrow$
$\qquad\qquad\qquad$ ($\downarrow$ CONTROLLER) = ($\downarrow$ SUBJ)

(11) VP $\rightarrow$ V ARG1
$\qquad\qquad\qquad$ $\uparrow=\downarrow$ ($\uparrow$ OBJ) = $\downarrow$

(10) is the rule handling the coordination of unlike categories where an infinitival phrase (INFP) is coordinated with a nominal phrase (NP): as in the standard analysis of coordination, conjuncts are added to a set. The non-standard element is the equation "($\downarrow$ CONTROLLER) = ($\downarrow$ SUBJ)" which structure-shares the controller of INFP with the subject of INFP. Since this annotation is attached to INFP exclusively, the f-structure of the other conjunct, NP, is unaffected – it is not controlled, the coherence condition is satisfied. Finally, the rule in (11) assigns the grammatical function OBJ to the coordinate phrase (see the previous section for an explanation).

The f-structure corresponding to (1) is provided in (12) below. It is produced by rules provided in (10) and (11) in conjunction with the annotation (9) placed in the lexical entries of forms of the verb CHCIEĆ ('want').

(12)
$$\begin{bmatrix} \text{PRED} & \text{'WANT}\langle\boxed{1},\boxed{2}\rangle\text{'} \\ \text{SUBJ} & \boxed{1}\begin{bmatrix} \text{PRED} & \text{'I'} \end{bmatrix} \\ \text{OBJ} & \boxed{2}\left\{ \begin{bmatrix} \text{PRED} & \text{'DRINK}\langle\boxed{1}\rangle\text{'} \\ \text{SUBJ} & \boxed{1} \\ \text{CONTROLLER} & \boxed{1} \end{bmatrix}, \begin{bmatrix} \text{PRED} & \text{'CIGARETTE'} \\ \text{CONTROLLER} & \boxed{1} \end{bmatrix} \right\} \end{bmatrix}$$

There are also examples which involve object control, as in the following example from English:

(13) My uncle said to hell with that and taught me [[karate], and [to fire weapons]]. (Google)

Assuming, for the sake of further illustration of the current proposal, that object control in English also involves functional – not anaphoric – control, expressed by the equation (14) in case of TEACH, this example can be handled using rules similar to the ones provided above: the ordering of conjuncts would be switched in (10), and OBJ-TH would be used instead of OBJ as the common grammatical function in (11).

(14) ($\uparrow$ OBJ) = ($\uparrow$ OBJ-TH CONTROLLER)

The f-structure in (15) results for "Uncle taught me [[karate], and [to fire weapons]]", a shorter version of (13):

(15)
$$\begin{bmatrix} \text{PRED} & \text{'TEACH}\langle\boxed{1},\boxed{2},\boxed{3}\rangle\text{'} \\ \text{SUBJ} & \boxed{1}\begin{bmatrix} \text{PRED} & \text{'UNCLE'} \end{bmatrix} \\ \text{OBJ} & \boxed{2}\begin{bmatrix} \text{PRED} & \text{'I'} \end{bmatrix} \\ \text{OBJ-TH} & \boxed{3}\left\{ \begin{bmatrix} \text{PRED} & \text{'KARATE'} \\ \text{CONTROLLER} & \boxed{2} \end{bmatrix}, \begin{bmatrix} \text{PRED} & \text{'FIRE}\langle\boxed{2},\boxed{4}\rangle\text{'} \\ \text{SUBJ} & \boxed{2} \\ \text{OBJ} & \boxed{4}\begin{bmatrix} \text{PRED} & \text{'WEAPON'} \end{bmatrix} \\ \text{CONTROLLER} & \boxed{2} \end{bmatrix} \right\} \end{bmatrix}$$

Conclusion

The analysis presented above successfully accounts for control into one of the conjuncts and its lack in the other (see the f-structures in (12) and (15)), though it has certain shortcomings. First, this solution requires the use of an extra attribute, CONTROLLER, however it must be noted that this attribute may also be used for other purposes such as handling agreement – CONTROLLER would then host the agreement controller. The other potential drawback is that CONTROLLER is represented on all conjuncts, including the nominal conjunct where it is spurious.

References

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