

Putting it all together: Agreement, incorporation, coordination and external possession in Wubuy
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In this paper we examine the interaction of a number of grammatical phenomena in Wubuy, a polysynthetic language from northern Australia, and show how they can be given a comprehensive analysis within the framework of LFG. While each of these phenomena – noun incorporation, verbal agreement, coordination and external possession – has received various treatments within the LFG literature, no one study has addressed the compatibility of these analyses under interaction, despite the fact that they frequently co-occur in the world’s languages. In this paper we use data from Wubuy to showcase the effects of this interaction, and investigate the implications for LFG. We show how standard LFG treatments of agreement and coordination combine effortlessly with the analysis of incorporation presented in Nordlinger and Sadler (2008) (henceforth NS08) to account for the complex Wubuy data. We also provide an analysis of the external possession construction (building on earlier work in LFG, e.g. Schrock 2007, Lødrup 2009) that can likewise interact appropriately with the rest of the grammar, providing a single unified account of a range of empirical facts. As well as accounting for the Wubuy data, this work has implications for LFG analyses of polysynthetic languages more generally.

Wubuy, like many polysynthetic languages, allows for productive incorporation of body parts, as shown in the following examples in which we see *-yarrga-* ‘flipper’ (1) and *-lanarr-* ‘nail’ (2) incorporated into the verbal word:¹

- (1) *nga-ngu-yarrga-gambana (ngarra-ngarrugali)*
 1SG-3FEM-flipper-roast.PR FEM.TOP-dugong
 ‘I’m roasting the dugong’s (FEM) flipper (NEUT)’
- (2) *na-lanarr ngayawinyinyung*
 MASC.TOP-nail 1sg.GEN
nga-ni-lanarr-wawayuwaa
 1SG-3MASC-nail-cut.PC
 ‘I was cutting off my nails (MASC)’

As is clear from examination of these two examples, however, incorporated body parts participate in two different construction types. (1) is an External Possession Construction (EPC), in which the whole (or possessor) is encoded as direct object. This is evidenced by (i) the fact that the object verb agreement (here, *-ngu-*) shows noun class agreement with ‘dugong’ (i.e. FEM) and not ‘flipper’ (NEUT); and (ii) the lack of genitive/oblique case marking on the external possessor NP, which shows it to be a core argument of the verb. The incorporated body part may be doubled by an external NP, which must appear in oblique case (3) showing it *not* to be a core argument of the verb. Example (4) shows that incorporation of

the body part is not obligatory in EPC constructions – but that the external NP expressing the part remains in oblique case irrespective of whether or not it is doubled by an incorporated nominal.

- (3) *ngaya nga-laan-barrhiyn yii-laan-duj*
 1SG 1SG-knee-sore.REFL.PP MASC.OBL-knee-LOC
 ‘I have sore knee(s)/I am sore in the knee(s)/my knee(s) is/are sore’
- (4) *ana-ngarrgu nga-rang*
 RESID.TOP-‘roo 1SG/RESID-spear.PP
a-lhuganda-rruj
 NEUT.OBL-shin-LOC
 ‘I speared the kangaroo in the lower leg’

In (2), the Internal Possession Construction (IPC), the incorporated body part is itself the direct object argument: the verb agrees with it directly (showing MASC object agreement in this case), and a doubled external NP appears in direct (unmarked) case. In the IPC, the possessor must be marked with the genitive case, as (2) also demonstrates.

Despite the difference in predicate-argument relations, and the morphosyntactic reflexes of this, incorporation in both cases can be clearly shown to be of the classifier type (Rosen 1989), since doubling of the incorporated body part is grammatical, and there is no reduction in valency. Furthermore, in both types of construction, the incorporated body part can be coordinated with an external NP, as shown in (5) and (6). In the EPC construction in (5), the part is an OBL and so coordination must be with other oblique NPs for the construction to be grammatical.²

- (5) *man’-aalburrunggu, nga-m’-anja-wagiwaa marri*
 VEG.TOP-turkey, 1SG-VEG-arm-break.PC and
mana-ma-laga
 VEG.TOP-VEG.REL-leg
 ‘I broke the wings (lit. ‘arms’) and the legs of the turkey’

In (6) [the IPC], on the other hand, the part is the object argument and so coordinates with other direct (unmarked) NPs, despite being incorporated:

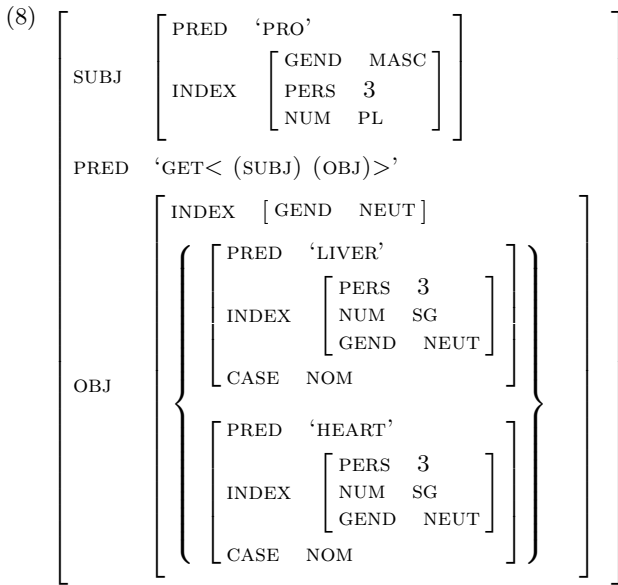
- (6) *wirri-wudu-miyn, marri andhiri, marri*
 3PL/3NEUT-liver-get.PP and heart and
bagalang wirri-ma-ngarrgiwayn
 eye 3PL-3VEG-cut.out.PP
 ‘They got the liver (NEUT), and heart (NEUT), and the eye (VEG) they cut out.’

²Note that the external part nouns are in the ‘relational’ noun class form here, in which part nouns take double noun class prefixation to agree with the noun class of the possessor. We regard these forms as obliques since part nouns in relational noun class cannot control verb agreement (like part nouns in the IPC construction do), although they need not take an overt oblique case suffix.

¹All the examples cited here come from (a subset of) the authors’ fieldnotes.

The coordination of incorporated body parts with external NPs has received almost no mention in the literature, and would seem to violate many standard accounts of coordination based on constituent structure. However, as we illustrate below and more extensively in our paper, it follows directly from the interaction of NS08’s analysis of nominal incorporation, and standard LFG analyses of coordination (e.g. Dalrymple 2001). (7) provides the lexical entry for the (first) IPC verb in (6), showing the analysis of the incorporated body part as projecting either the OBJ or a member of the OBJ (NS08). External NPs are also annotated with $(\uparrow \text{OBJ } (\epsilon)) = \downarrow$ in the c-structure, resulting in the (partial) f-structure in (8) for the first clause in (6). Note that case agreement amongst the coordinands is enforced by the fact that case is a distributive feature.³

- (7) *wirri-wudu-miyn*
 $(\uparrow \text{PRED}) = \text{‘get} < (\text{SUBJ})(\text{OBJ}) > \text{’}$
 $(\uparrow \text{OBJ } (\epsilon)) = \downarrow$
 $(\downarrow \text{PRED}) = \text{‘liver’}$
 $(\downarrow \text{INDEX PERS}) = 3$
 $(\downarrow \text{INDEX NUM}) = \text{SG}$
 $(\downarrow \text{INDEX GEND}) = \text{NEUT}$
 $(\uparrow \text{OBJ INDEX GEND}) = \text{NEUT}$

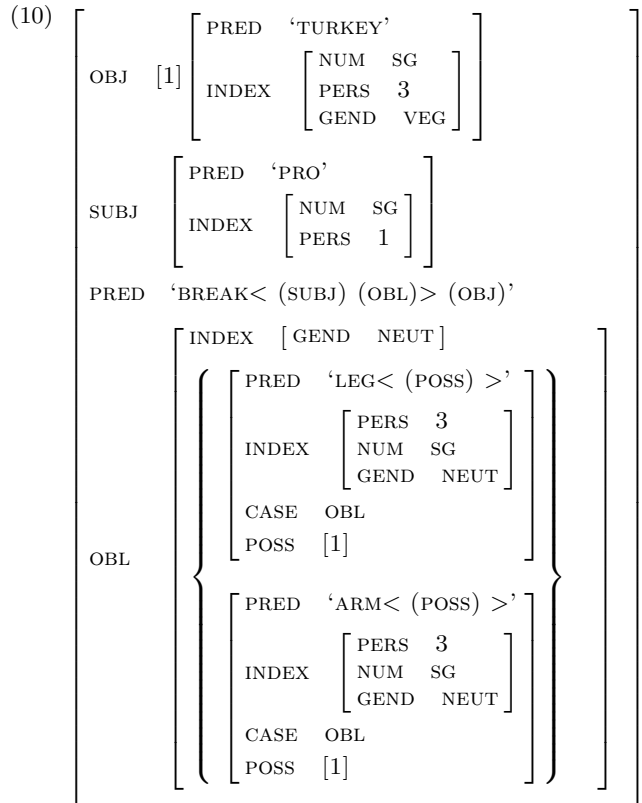


In the EPC construction, we assume that the ‘raised’ possessor is a non-thematic object of the verb, and is identified with the possessor selected by the incorporated nominal (which is itself an OBL) (9). As shown in the associated (partial) f-structure (10), the POSS will distribute appropriately across all members of the coordinated set. We omit here for reasons of space the semantics NS08 assign to the incorporation, but provide full details of the semantic part of the analysis in the paper.

- (9) *nga-ma-laga-wagiwaa*
 $(\uparrow \text{PRED}) = \text{‘break} < (\text{SUBJ})(\text{OBL}) > (\text{OBJ}) \text{’}$

³We use NOM to refer to the direct (unmarked) case that is found on subjects and objects in Wubuy.

- $(\uparrow \text{OBJ}) = (\uparrow \text{OBL POSS})$
 $(\uparrow \text{OBL } (\epsilon)) = \downarrow$
 $(\downarrow \text{PRED}) = \text{‘leg} < (\text{POSS}) > \text{’}$
 $(\downarrow \text{INDEX PERS}) = 3$
 $(\downarrow \text{INDEX NUM}) = \text{SG}$
 $(\downarrow \text{INDEX GEND}) = \text{NEUT}$
 $(\uparrow \text{OBJ INDEX GEND}) = \text{VEG}$



Thus, we provide a comprehensive analysis of body part incorporation in Wubuy and show how existing analyses of different aspects of the grammar – external possession, incorporation, agreement and coordination – interact to provide a single analysis of the complex empirical facts. This approach highlights the strength of LFG in accommodating typologically diverse languages, and will have important implications for the analysis of polysynthetic languages cross-linguistically.

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