Double control and crossed control in Indonesian: an LFG analysis

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This paper reports the progress made in the development of a deep computational grammar of Indonesian within the LFG-based (Bresnan 1982, 2001; Dalrymple 2001) Parallel Grammar Project: the ability of the grammar to handle the ambiguity and complexity of dependency relations in relation to the so-called double control and crossed control constructions (DCC and CCC, respectively). The DCC has been overlooked in Indonesian linguistics, and also in the control literature. Consider the transitive verb *coba* 'try' with a simple object 'the car' in (1). It can have AV (actor voice), UV (undergoer voice), or PASS (passive voice) alternations (1a-c). Fronting the object in the AV structure is not acceptable (1d); cf. the contrast between (1b) and (1d). The same verb (*coba*) can take a clausal argument with different voice alternations: AV, single control (2a), UV, double control (2b,c). The controlled argument is indicated by an empty slot (–) and the identity of the dependency by the index subscripts (*i,j*). DCCs, in particular (2c), where the controller appears in the embedded clause, pose a challenge to any theory of control: it is often assumed that the controller must be more prominent than the controlee.

(1). a. *Saya* *mencoba* *mobil* *itu*.
1SG AV.try car that
'I tried the car'

b. *Mobil* *itu* *saya* *coba*
car that 1SG. UV.try
'I tried the car.'

c. *Mobil* *itu* *sudah* *dicoba.*
car that PERF PASS.try
'The car has been tried.'

d. ?* *Mobil itu saya sudah mencoba*

(2). a. *Saya* *mencoba* [– *menjual* *mobil* *itu*].
1SG AV.try AV.sell car that
'I tried to sell the car.'

b. [Mobil itu]$_i$ saya$_j$ coba [–$_i$ –$_j$ jual]
car that 1SG UV.try UV.sell
'I tried to sell the car.'

c. [Mobil itu]$_i$ –$_j$ coba [–$_i$ saya$_j$ jual]
car that UV.try 1SG UV.sell
'I tried to sell the car.'

d. ?**Mobil itu saya coba menjual*

The CCC, exemplified in (3) (Arka 2000; Nomoto 2011; Polinsky and Potsdam 2008), shows a similar property, posing a challenge for proper analysis and computational implementation. Note that (3) is ambiguous between the ordinary control reading (a) and crossed control reading (1b). As in (2c), the puzzle in (3, reading b) is the possibility of the matrix experiencer *ibu* 'mother' (i.e. the 'wanter') being controlled and realised as the agent of the embedded verb *dicium* 'kiss'.

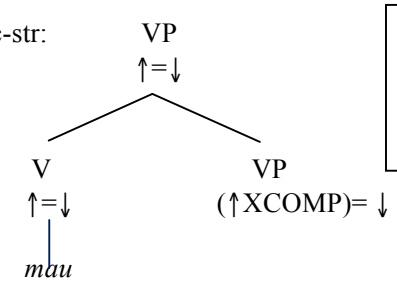
(3). *Saya* *mau/ingin* [– *di-cium* *oleh* *Ibu*]
1s want PASS-kiss by Mother
a. 'I wanted to be kissed by Mother.' (ORDINARY CONTROL READING)
b. 'Mother wanted to kiss me.' (CROSSED CONTROL READING)

Polinsky & Posdam (2008) propose a rasing analysis for the CCC in (3), accounting for its control-like interpretation via the lexical semantics of *mau* 'want'. However, they fail to answer whether a raising analysis also accounts for the simple control structure with the AV verb, as in (2a). No raising is involved in Nomoto's analysis (2011), but it fails to account for the different realisations of the matrix agent in the lower clause. The proposed LFG analysis provides a unified account, addressing the issues not accounted for in Polinsky & Potsdam (2008) and Nomoto (2011). Crucially, we also implement and test the analysis in our XLE-based Indonesian computational grammar. We propose that the DCC and CCC be analysed as a serial verb construction (SVC), forming a complex predicate, which licenses 'raising' and argument sharing, enabling an argument to be realised only once in the surface syntax. This is cross-linguistically a well-known property of SVCs. The SVC analysis is implemented in XLE (Crouch et al. 2007) by means of a restriction operator (Butt and King 2006; Butt, King, and Maxwell III 2003; Kaplan and Wedekind 1993). The entry of *mau* 'want' is (4). When it is inserted in the SVC c-structure tree, which is a verb phrase (VP), it becomes part of the SVC, as seen in (5). Then, the SVC predicate imposes sharing and raising constraints, as in the box in (5). The expriencer of *mau* (i.e. the underlying subject annotated as (↓SUBJ)) is shared with the embedded complement's OBL (or OBJ, not exemplified here).

(6) shows the c-str and f-str output parses for (3, reading b). The f-str shows that the SVC takes the whole a-str/SUBCAT frame of *mau,* but assigns a non-thematic matrix SUBJ, indicated outside the angle brackets (tag 2). This matrix SUBJ (*saya*) is shared with the thematic embedded XCOMP SUBJ, capturing the raising effect. The grammar can correctly identify *saya* as the subject of the whole SVC structure, even though *saya* is not a surface syntactic argument of the matrix verb *mau*. It also shows that *ibu* 'mother' (tag 37) is the underlying subject (i.e. first argument) of *mau*, despite surfacing as the OBL of the XCOMP.

(4). *mau* V (↑PRED) = 'want<(↑SUBJ)(↑XCOMP)>'
'exp' 'proposition'

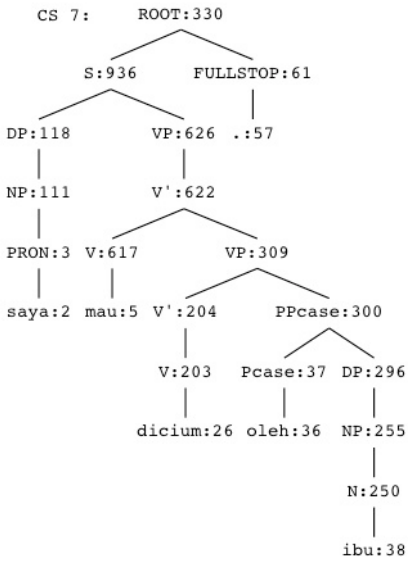
(5) SVC c-str:



(↑PRED) = 'want<(↑SUBJ)(↑XCOMP)>'

(↑PRED) = 'SVC<(%PRED)>(↑SUBJ)'
↑\PRED\GF= ↓\PRED\GF
(↑SUBJ)=(↓XCOMP SUBJ)
(↓SUBJ)= {(↓XCOMP OBL)| (↓XCOMP OBJ)}

(6) c-str



f-str

"saya mau dicium oleh ibu."

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PRED        'SVC<'mau<[37:ibu], [26:cium]>'>[2:saya]'
SUBJ        [PRED  'saya'
             GLOSS [TRANS pronominal]
           2[NUM sg, PERS 1, PRON-TYPE pers]
XCOMP       [PRED       'cium<[2:saya], [37:ibu]>'
             SUBJ       [2:saya]
             GLOSS      [TRANS kiss]
             OBL        [PRED  'ibu'
                         GLOSS [TRANS mother]
                         NTYPE [NSEM [COMMON count]
                                NSYN common]
                         PSEM  ⟨agt⟩
                       37[CASE obl-ag, PERS 3]
           26[VOICE-TYPE PASSIVE]
GLOSS       [TRANS want]
TNS-ASP     [MOOD indicative]
57[CLAUSE-TYPE decl]
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