Control-Forming Domains are Not Only Phases: Evidence for Probe Horizons

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I. Introduction. A general assumption is that syntactic Phases (Chomsky 2001) delimit *probing* domains. Keine (2016, *to appear*) proposes that probes can have *search-restrictions*, which he terms 'Horizons', introducing a new type of locality in addition to phases. This paper examines the domains of Control-formation in Slovenian (South Slavic) and determines that Keine's system is needed: Control must be constrained with a combination of phasal boundaries and probe Horizons. We will show that, with TP-embeddings, Subject Control is possible, but that *only Object Control* is possible with CP-embeddings. Since the embedding is a *weak phase* in both cases, it follows that the X^0 responsible for assigning the external θ-role must be unable to probe across C^0. In other words, C^0 must be a Horizon for this probe.

II. Basic Data. Slovenian has two types of Control constructions: one type embeds an infinitival TP, and the other an infinitival CP when the matrix verb is a *perception* predicate. To facilitate the discussion of the latter, we must first consider cases where perception verbs embed regular, finite CPs. In those cases, an *extra* DP object can occur in the matrix clause:

(1) Otroci vidjo/slišjo, [da Janez$_{NOM}$ kosi travo.]
children see/hear that John mows lawn
'The children see/hear that John is mowing the lawn.' *No extra internal θ*

(2) Otroci vidjo/slišjo Janeza$_{ACCi}$, [da pro_i kosi travo.]
children see/hear John that mows lawn
'The children see/hear John mowing the lawn.' *Extra internal θ!*

(2) is a type of prolepsis with a base-generated DP-object, involving an embedded pro.[1] The embedded clause is fully finite with no tense or ϕ-deficiency. Also, the matrix DP 'John' must be the 'object of perception' in (2), but it is not in (1). This implies that perception verbs bear an *optional internal θ-role*.

Perception verbs can also embed *infinitival* CPs, which are instances of Object Control, as in (3):

(3) Otroci vidjo Janeza$_{ACCi}$ [$_{CP}$ PRO$_i$ kosit travo].
children see John mow-INF lawn
'The children see John mowing the lawn.'

Why should (3) be analyzed as Control and not as ECM/SUBJ-to-OBJ raising? Since Slovenian is a negative concord language, negative words such as *nobody* require Neg^0 to be a clause-mate. If *nobody* is a Controller in typical TP-embedding constructions, Neg^0 cannot occur low (4), and exactly the same is true of the perceptual Control construction (5), which suggests *nobody* is θ-marked in the matrix clause:

(4) *Noben$_i$ poskuša [$_{TP}$ PRO$_i$ [ne] kosit travo].
nobody tries not mow-INF lawn
'Nobody is trying to mow the lawn.'

(5) *Otroci vidjo nobenga$_{ACCi}$ [$_{CP}$ PRO$_i$ [ne] kosit travo].
children see nobody not mow-INF lawn
'The children don't see anyone mowing the lawn.'

Note that Neg^0 can occur low, with a different scope reading, but only when the Controller is *not* a negative word. Den Dikken (2017) makes similar observations about supposed cases of Hyper-Raising in Finnish and Hungarian, and notes that we do not expect the pattern in (4)–(5) to obtain with raising. In fact, subject scrambling and A′-movement reveal no such restriction in Slovenian. This implies matrix θ-marking of the object in (3), and hence Control, since it must be a clause-mate with Neg^0.

We must also justify the TP/CP-difference in embedding in (4)–(5). A fairly standard diagnostic for the presence of a CP in Slovenian is *clitic climbing* (Marušič 2005). While clitic climbing is possible if not obligatory with regular Control (6), it is not possible with perceptual Control (7):

(6) Otroci$_i$ so [ji$_j$] probal [$_{TP}$ PRO$_i$ dat t_j darilu].
children AUX her$_{CL:DAT}$ try give-INF present
'The children tried to give her a present.'

(7) Otroci so (*ji$_j$) videl Janeza$_{ACCi}$ [$_{CP}$ [ji$_j$] PRO$_i$ dat t_j darilu].
children AUX her$_{CL:DAT}$ see John her$_{CL:DAT}$ give-INF present
'The children saw John give her a present.'

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[1] This must be the case. I will present data in which a ϕ-mismatch between the matrix object and the embedded *pro* may occur; and the matrix object – if it is a coordination – can also serve as a 'split antecedent' for the embedded subject and object.

III. The Problem. As noted above, the perceptual verbs participating in the (1)–(2) constructions host an <u>optional</u> internal θ-role that gets assigned to the matrix DP-object when present. We expect this θ-optionality to work in the same way when perceptual Control is formed. However, derivations without the additional internal θ-role always crash when embedding $\mathrm{CP_{INF}}$:

(8) *Otroci$_i$ vidjo [$_{CP}$ PRO$_i$ kosit   travo].
     children see   mow-INF lawn
     int.'The children see (themselves) mowing the lawn.'

In the absence of the extra internal θ-role, we expect Subject Control to occur, as in (8), which does for instance occur in English: cf. *John asked$_\theta$ Mary$_i$ [PRO$_i$ to leave]* vs. *John$_i$ asked [PRO$_i$ to leave]*. But this is not the case in Slovenian, even though subject Control is possible with TP-embeddings, cf. (6). One might consider a *lexical solution* to this problem: perhaps $\mathrm{CP_{INF}}$ can only be c-selected by a $\mathrm{v^0}$ that obligatorily (and not optionally) specifies an extra internal θ-role. This hypothesis does predict (8). However, every perceptual verb that participates in (1)–(2) (e.g. *videt* 'see', *slišat* 'hear', *opazt* 'notice', *zaznat* 'detect', etc.) can also form perceptual Control. The selection analysis would predict that this generalization is a *lexical accident*, since some verbs could easily select for $\mathrm{CP_{INF}}$ while keeping their internal θ-role optional. If we wish to derive this systematic behaviour of perception verbs, we need to find a different solution.

IV. Role of Phases. Could the strong/weak Phase (Chomsky 2001) distinction be invoked to solve the discussed problem? It cannot. The presence of a *weak phase boundary* between the matrix and embedded clauses is a pre-condition for Control-formation to begin with (Boeckx et al. 2010; Gallego 2010), and we present extra evidence to support this. The embedded $\mathrm{CP_{INF}}$ is indeed a *weak phase*: it allows long-distance NPI-licensing (9), it is tense/ϕ-deficient (10), it licenses scope inversion with a matrix Q (11):

(9) Otroci niso   videl Janeza$_{ACC}$ [$_{CP}$ **s   prstom mignt**, da bi   pomagov].
     children AUX-not see   John   with finger move-INF that would help
     'The children didn't see John lift a finger to help.'

(10) *Otroci so   včeri   videl Janeza$_{ACC}$ [$_{CP}$ jutr   kosit   travo].
     children AUX$_{PAST}$ yesterday see   John   tomorrow mow-INF lawn
     int.'The children yesterday saw John mowing the lawn tomorrow.'

(11) Otroci vidjo enga policaja$_{ACC}$ [$_{CP}$ stat   na vsakmu kriziscu].
     children see   one policeman   stand-INF on every crossroads
     'The children see one policeman standing at every crossroads.'   *one>$\forall$, <u>$\forall$>one</u>*

(9) and (11) are not possible across strong phases in Slovenian, while (10) is grammatical *only* across strong phases. $\mathrm{CP_{INF}}$ is inevitably *weak*, which means that this alone cannot derive (8).

V. Horizons. Keine (2016, *to appear*) proposes that *probes* may have restrictions on 'search', imposing a new constraint on probing, in addition to strong phasal spell-out. I propose that this is what we require in order to derive (8). Specifically, Voice^0, which is responsible for assigning the external θ-role, always *terminates* probing when it encounters a C-feature; in Keine's terms, C is a Horizon for Voice^0 ('Voice$^0 \Vdash$C'):

(12) Θ-assigning heads in Slovenian:
     Voice$^0 \Vdash$ C, v$^0 \Vdash \varnothing$

This means that Voice^0 will never be able to probe past C^0, but v^0 will, since it has no Horizon restriction. This directly derives the distinction between the two Control types in Slovenian:

(13) [$_{TP}$ . . .Voice$^0_{u\theta}$. . . v$^0_{u\theta}$ . . .   [$_{TP}$ DP . . .]]   [$_{TP}$ . . .Voice$^0_{u\theta}$. . . v$^0_{u\theta}$ . . .   [$_{CP}$ DP . . .]]

The upshot of this is that Subject Control is possible with TP-embeddings, but only Object Control is possible with CP-embeddings. It should be noted that it does not matter which theory of Control we subscribe to: under the Movement Theory of Control (Boeckx et al. 2010), the $u\theta$-probe on Voice^0 will not be able to probe past C^0 to discover the DP in the embedded SpecTP, while under Landau's (2004) approach, Voice^0 will not be able to probe past C^0 to license the [−R(efer)] feature on the embedded PRO. Under both views, the derivation without an internal θ-role will crash.

Conclusion. In sum, Horizons are required to constrain probing in addition to the locality domains set by strong phasal spell-out. This distinction gives a principled account of why CP-embedding Control constructions do not permit forming Subject Control in Slovenian, but the TP-embedding ones do. Voice^0 must terminate probing as soon as it encounters a C-feature, while v^0 has no such restriction.

Selected references: Keine, S. (2016). *Probes and their Horizons.* PhD Thesis, Umass, AM. • Keine, D. (*to appear*). Selective Opacity. *Linguistic Inquiry.*