WHAT CAN TEACH TEACH US ABOUT T?
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1. INTRODUCTION AND BASIC DATA

In obligatory control (OC) constructions in Croatian, the empty subject of the complement clause of the control verb may be controlled by both the matrix subject and the matrix object. Obligatory subject control (OSC) verbs usually take the infinitival complement, while the subjunctive complement is possible, but dispreferred. This is shown in (1).

1. a. Jan želi ___ ići u kino.  
    Jan,NOM wants e to-go in cinema  
    ‘Jan wants to go to the cinema.’

b. ?Jan želi da ___ ide u kino.  
   Jan,NOM wants that e go.3sg in cinema  
   ‘Jan wants that (he) goes to the cinema.’

Obligatory object control (OOC) verbs, on the other hand, usually take subjunctive complements (Bailyn, in press; Stojanović and Marelj, 1998). Infinitival complements are disallowed, as shown by the contrast in (2)

2. a. Jan je naredio Vidu da ___ napiše zadaću.  
    Jan,NOM Aux ordered Vid,DAT that e write.3sg. homework  
    ‘Jan ordered Vid that he writes the homework.’

b. *Jan je naredio Vidu ___ napisati zadaću.  
   Jan,NOM Aux ordered Vid,DAT e to-write homework  
   ‘Jan ordered Vid to write the homework.’

However, a few verbs, (n)ačiti ‘teach’, pomoći ‘help,’ possibly also nagovoriti ‘persuade,’ dozvoliti ‘allow,’ and poslati ‘send’ can take both a subjunctive complement and an infinitival complement, with no contrast. In fact, the infinitival complement is preferred, in the same way in which it is preferred in OSC cases.

3. a. Jan je naučio Vida ___ voziti bicikl.  
    Jan,NOM Aux taught Vid,ACC e to-drive bicycle  
    ‘Jan taught Vid to ride a bike.’
b. ‘Jan taught Vid that he rides a bike.’

4. a. Hana helps Dan to-cook e ’Hana is helping Dan to cook.’
    b. ‘Hana is helping Dan that he cooks.’

In what follows, we will be mostly concerned with the examples such as the ones in (3a) and (4a), namely, OOC structures with infinitival complements.

### 2. THE PUZZLE

For a subset of Croatian speakers, the infinitival complement of OOC verbs ((na)učiti ‘teach’, pomoći ‘help’) cannot contain a possessive anaphor (PA) svoj ‘self’s’.

5. *Vidi teaches Jan to-drive self’s car
   ‘Vidi is teaching Janj to drive hisi/j car.’

6. *Vidi helps Jan to-drive self’s car
   ‘Vidi is helping Janj drive hisi/j car.’

The PA is subject-oriented and can only be bound by a local nominative, as shown by examples in (7) and (8).

7. a. *Ja love self’s job
   ‘I like my job.’
   b. Vid claims that I love self’s job
   ‘Vid claims that I like my job.’

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1 For others, judgments are extremely unstable: some speakers allow only the matrix subject to be the antecedent of the anaphor, some allow only the matrix object to bind it, while some accept the sentence on both readings.
8. *Meni se sviđa svoj posao. (from Bailyn (2007), judgment mine)
   me,DAT refl. pleases self’s job
   ‘I like my job.’

The ungrammaticality of examples in (5)/(6) cannot be explained by appealing to the absence of a local nominative in the infinitival clauses.

There is evidence that in Croatian OC constructions, PRO always bears nominative case, regardless of the case of the controller. 2 Nominative on PRO can be inferred from the case marking on secondary predicates (SPs), which in OOC constructions always bear nominative, as shown by (9) and (10).

   Hana,NOM,F teaches Jan,ACC,M PROi to-drive car drunk,NOM,M/*drunk,ACC,M /*drunk,NOM,F around house
   ‘Hana is teaching Jan to drive a car drunk around the house.’

    Hana,NOM,F helps Jan,DAT,M to-drive car drunk,NOM,M/*drunk,DAT,M /*drunk,NOM,F around house
    ‘Hana is helping Jan drive a car drunk around the house.’

These examples show the following:

i. The SP is embedded in the infinitival clause:
   a. The feminine form of the SP is disallowed, indicating that the SP is an object depictive (predicated of Jan), and not the subject depictive (predicated of Hana),
   b. The SP precedes the adverbial phrase oko kuće ‘around the house’, which can only modify the embedded verb vozi ‘drive’.

ii. There are no overt arguments in the infinitival clause → the SP is predicated of a covert argument: PRO.

iii. The masculine form of the secondary predicate is only grammatical in the nominative, and is disallowed in the accusative/dative (the case born by the controller).

iv. Therefore, PRO bears nominative, unlike its controller.

Inferring nominative on PRO from the nominative on the SP is justified, since SPs always agree in case with the phrase they are predicated of, as the following examples show.

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   Nenad_{NOM} Aux watched movie drunk_{NOM}
   ‘Nenad watched the movie drunk.’

12. Nenad je vidio Teu pijanu /*pijana.
   Nenad_{NOM} Aux seen Tea_{ACC} drunk_{ACC/*NOM}
   ‘Nenad saw Tea drunk.’ (Tea is drunk)

THE ABSENCE OF PA BINDING IN (5)/(6) IS NOT DUE TO THE ABSENCE OF A LOCAL NOMINATIVE.

It is not the case that PRO in general cannot bind a SP. In OSC cases, the nominative-marked PRO successfully binds the PA:

13. Vid_{i} želi PRO_{i} voziti svoj_{i} auto pijan oko kuće.
    Vid_{NOM} wants PRO_{i} to-drive self_{s_{i}} car drunk_{NOM} around house
    ‘Vid wants to drive his car drunk around the house.’

THE ABSENCE OF PA BINDING IN (5)/(6) IS NOT DUE TO THE FACT THAT THE BEARER OF THE LOCAL NOMINATIVE IS PRO.

So, why is the PA in (5) and (6) not bound?

In other words, what makes PRO_{NOM} in OOC different from PRO_{NOM} in OSC?

CLAIMS

I. The difference lies in the way in which PRO receives case in OSC on the one hand, and in OOC on the other.
   i. In OSC, PRO receives nominative from the controller via case-transmission.
      a. Both the controller and PRO agree with the matrix T^0, which values/checks their case.
   ii. In OOC, case-transmission is impossible. PRO receives nominative from the embedded C^0, which takes the infinitival TP as the complement (Landau, 2008).
      a. No direct agreement between T^0 and PRO is involved in the process.
II. Binding of PA is sensitive to this distinction: a PA can be bound by a nominative assigned by T^0, but not by a nominative assigned by C^0.
IMPLICATIONS:

a. General
   i. The difference in operations involved in case-marking of PRO in OSC and OOC, manifested in different possibilities of PA binding, argues against the claim that T<sub>0</sub>, not being a phase-head, enters the derivation featureless, and inherits all of its uninterpretable features from the selecting phase-head C<sub>0</sub> (Chomsky, 2007).

b. For the theory of OC:
   i. The absence of case transmission in OOC argues against the moving theory of control, recently proposed by Hornstein (1999; 2003) and Boeckx and Hornstein (2004).

In the rest of the talk, I will:

I. Present arguments, from Landau (2008), for the claim that control may involve either PRO-Control or C-control. The route of control taken has consequences for the mechanism involved in the case-marking of PRO.

II. Show how the analysis explains the contrast in Croatian PA binding in OSC and OOC.

III. Show that the contrast in PA binding argues against the feature inheritance hypothesis (Chomsky, 2007).

3. Landau (2008): Two Routes of Control (Russian OOC)

Landau (2008) examines Russian data and observes that in certain environments, the SP in the infinitival clause (therefore, PRO as well) may appear in either of the following two options:

- Bearing the case of the controller,
- Bearing the case different from that of the controller (in Russian: dative).

One such environment is OOC. The two options of case-marking in OOC in Russian are illustrated below:

14. a. Ona poprosila ego ne ezdit’ tuda odnogo /odnomu zavtra.’
   she<sub>NOM</sub> asked him<sub>ACC</sub> not to-go there alone<sub>ACC</sub>/alone<sub>DAT</sub> tomorrow
   ‘She asked him not to go there alone.’

b. Ona ugovorila ego pogovorit’ samogo /samomu s ejo roditeljami.
   she<sub>NOM</sub> convinced him<sub>ACC</sub> to-talk himself<sub>ACC</sub>/himself<sub>DAT</sub> with her parents
   ‘She convinced him to talk himself to her parents.’

   (Landau 2008: ex. (19a-b))
The fact that PRO in (14) may bear either the case of the controller (accusative) or an independent case (dative) is captured by Landau’s “agreement model of control,” developed in Landau (2000; 2006; 2007).

In this system, the control relation obtains as a consequence of (multiple) agreement between a matrix functional head (T/v) and:

- The controller in the matrix clause,
- An element that bears φ-features in the infinitival clause.

When the highest φ-bearing element in the infinitival clause is PRO, control is established as illustrated in (15).

15. \[[CP \ldots T/v \ldots DP \ldots [CP C [TP \text{PRO} [T' T VP]]]]\]  
\[PRO\text{-control} \rightarrow \text{case transmission}\]

When the highest φ-bearing element in the infinitival clause is C, control is established as illustrated in (16).

16. \[[CP \ldots T/v \ldots DP \ldots [CP C[φ] [TP \text{PRO} [T' T VP]]]]\]  
\[C\text{-control} \rightarrow \text{independent case}\]

Each of the two routes of control dove-tails with the case properties of PRO. In other words, the case properties of PRO are an indication of how the control relation is established.

In (15), the embedded C has no φ-features. Consequently, it is not capable of checking case on PRO.\(^3\) At the same time, the highest φ-bearing element in the infinitival clause is PRO. The fact that both the controller and PRO agree with the same head ensures that they both receive the same case (‘case transmission’).

If, on the other hand, the embedded C bears φ-features, as in (16), it can agree with PRO and check its case. In this scenario, the case on PRO is different from the case of the controller, i.e. PRO ends up with whatever case-value the embedded C is capable of checking, in Russian – dative.

At the same time, locality ensures that T/v agrees not with PRO itself, but rather with the embedded C (since this is the closest element on which φ-features are available). Thus, in (16), no agreement takes place between PRO and T/v of the matrix clause. Rather, the relationship between the two is mediated by the fact that both agree with C.

\(^3\) The assumption is that case is a reflex of agreement in φ-features (Chomsky, 2001).
Given the optionality of case transmission in (14), it seems that in Russian OOC, both routes outlined in (15) and (16) may be taken.

When either of the two routes is taken depends on the $\phi$-feature specification on the embedded C:

- When C has $\phi$-features, C-control in (16) obtains.
- When C does not have $\phi$-features, PRO-control in (15) obtains.

4. CROATIAN OOC: C-CONTROL

Recall the Croatian examples in (9) and (10), which I repeat here as (17) and (18).

17. Hana uči Jana $i$ PRO$_i$ voziti auto pijan /*pijanog /*pijana oko kuće.  
Hana$_{NOM,F}$ teaches Jan$_{ACC,M}$ PRO$_i$ to-drive car drunk$_{NOM,M}$/*drunk$_{ACC,M}$/*drunk$_{NOM,F}$ around house  
‘Hana is teaching Jan to drive a car drunk around the house.’  
(Jan is drunk in the driving event, not the teaching event.)

Hana$_{NOM,F}$ helps Jan$_{DAT,M}$ to-drive car drunk$_{NOM,M}$/*drunk$_{DAT,M}$/*drunk$_{NOM,F}$ around house  
‘Hana is helping Jan drive a car drunk around the house.’  
(Jan is drunk in the driving event, not the teaching event.)

Croatian seems to differ from Russian in that case transmission is never an option in OOC environments.

This indicates that the matrix functional head, in our case $v$, does not directly agree with PRO, i.e. the route in (15) does not seem to be available.

This in turn means that in Croatian, C is always endowed with $\phi$-features, and it always case-marks PRO. Unlike in Russian, the case assigned to PRO by the embedded C is not dative, but nominative.

Taking the PA binding into consideration, the following preliminary generalization emerges:

19. PA binding is impossible in C-control.

5. CROATIAN OSC: C-CONTROL OR PRO-CONTROL?

What about OSC in Croatian? With respect to case detectable on PRO, OSC patterns with OOC: in both cases PRO bears nominative.
However, in the OSC case, the nominative on PRO might have two sources:

- It might be transmitted from the controller (indicating PRO-control, the route in (15))
- It might be assigned by the embedded C (indicating C-control, the control route in (16))

We have already seen that OSC and OOC differ with respect to PA binding: while the former allows it, the latter does not. The relevant contrast is repeated below.

20. Vid_{i} želi PRO voziti svoj_{i} auto. 
   Vid_{NOM} wants PRO to-drive self’s_{i} car 
   ‘Vid wants to drive his car.’

21. *Vidi uči Jan_{ij} PRO voziti svoj_{ij} auto. 
    Vid_{NOM} teaches Jan_{ACC} PRO to-drive self’s_{ij} car 
    ‘Vid_{i} is teaching Jan_{ij} to drive his_{ij} car.’

If we could show that OSC in Croatian does not involve C-control, this would give support to our generalization in (19), that PA binding is incompatible with C-control.

In Russian, an independent case (dative) never appears in OSC constructions, as illustrated by (22). This indicates that in Russian, control in OSC constructions always obtains via PRO-control.

22. Ona sobiralas’ putešestvovat’ odna /*odnoj v Japonii. 
    she_{NOM} planned to-travel alone_{NOM} /*alone_{DAT} in Japan 
    ‘She planned to travel alone in Japan.’

6. CROATIAN OSC: CAN C-CONTROL BE EXCLUDED?

Landau (2008) excludes C-control in Russian OSC by capitalizing on the fact that the complementizer head which introduces the infinitival clause is null.

Null C (as opposed to lexical C) is treated as a clitic, which obligatorily cliticizes onto a higher head (a head in the matrix clause).

Landau further proposes that this higher head is different in OSC and in OOC:

- OSC → C cliticizes onto v\(^{0}\) of the matrix clause – illustrated in (23a)
- OOC → C cliticizes onto Appl\(^{0}\) of the matrix clause (Appl\(^{0}\) introduces the matrix object) – illustrated in (23b).
In OSC, C, having cliticized onto v, becomes inaccessible to matrix T, because both v and C bear an identical set of φ-features, which makes v act as a defective A-over-A intervener for the agree relation between matrix T and embedded, cliticized C.

In OOC, on the other hand, the closest heat onto which C can cliticize is not v, but rather Appl. Since Appl does not bear φ-features, it induces no intervention, and T is free to agree with C.

I would like to propose that the same analysis can be imported into Croatian, the only difference being the fact that C is always endowed with φ-features, so in OOC environments, it is always a closer goal than PRO for the matrix v probe.

One slight piece of evidence to this effect comes from the fact that in Croatian even the lexical complementizer da ‘that’ demonstrates some clitic-like behavior in irrealis contexts. If this is taken as evidence that a lexical complementizer is a clitic, then the claim that a null one also is seems less ad hoc.

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4 Progovac (1993) and Vrzić (1996) argue that there are two homophonous, but semantically distinct complementizers in Serbo-Croatian: declarative da and modal da.
6.1. CROATIAN C – A CLITIC?

Croatian pronominal and auxiliary clitics are second position elements, always occupying the second position in their finite clause:

24. Ivan joj ga je pokazao.
   Ivan her.DAT him.ACC Aux.3SG showed
   ‘Ivan showed him to her.’

25. Ivan tvrdi [da joj ga je pokazao].
   Ivan claims [that her.DAT him.ACC Aux.3SG showed ]
   ‘Ivan claims that he showed it to her.’

In modal contexts where the first position is occupied by a wh-phrase, followed by the ‘modal’ *da*, the second-position clitics follow the complementizer, and not the wh-phrase.

26. a. Kome DA ga dam?
    whom.DAT that him.ACC give.1SG
    ‘To whom should I give it?’

    b. *Kome ga DA dam?
       whom.DAT him.ACC that give.1SG

This is in sharp contrast with wh-questions which do not contain an overt complementizer, illustrated in (27). In these, the clitic(s) must follow the wh-phrase, and cannot be placed in the “third” position.

27. a. Kome ga daješ?
    whom.DAT him.ACC give.2SG
    ‘To whom are you giving it to?’

    b. *Kome daješ ga?
       whom.DAT give.2SG him.ACC

The contrast indicates that in (26a), the complementizer *da* ‘that’ itself might be cliticized onto the wh-phrase.

If this reasoning is on the right track, then perhaps it is not hard to believe that the null complementizer which introduces the infinitival clauses is also a clitic, and has to cliticize onto an element (a head) in the matrix clause.
### 6.2. CROATIAN OSC: PRO-CONTROL

If this is the case, then Croatian OSC constructions have the derivation in (23a):

- C, being cliticized onto matrix v, becomes inaccessible to agree with the matrix T.
- Consequently, in Croatian, like in Russian, all OSC environments involve PRO-control.

So, control in Croatian OSC and OOC environments comes to obtain in different ways:

- OSC $\rightarrow$ PRO-control
- OOC $\rightarrow$ C-control

Consequently, the possibilities of PA binding in Croatian OC environments are an indicator of the route of control:

- PA binding **POSSIBLE** $\rightarrow$ PRO-control
- PA binding **IMPOSSIBLE** $\rightarrow$ C-control

PRO-control and C-control differ, among other things, in the source of Case on PRO:

- PRO-control: **PRO enters an Agree relation with the matrix T**, which has already agreed with the controller.
- C-control: **PRO enters an Agree relation with the embedded C**, which itself agrees with the matrix T.

Differences in PA binding possibilities in the two routes of control may be accounted for by the following statement:

28. PA binding is **sensitive to the source of the nominative** on the local binder.

Suppose that (28) is on the right track.

### 7. SO WHAT?

In the remainder of the talk, I argue that the conclusion in (28) has repercussions for the theory of feature inheritance (FI), proposed by Chomsky (2007).

Namely, the contrast in PA binding between OSC and OOC argues against the claim that uninterpretable features (uFs) on T are inherited from C.
7.1. Feature Inheritance: A Crash Course

The FI theory rests on the following assumptions:

- Only uFs may drive operations in syntax.
- Only phase heads are endowed with any uFs, in accordance with the Strong Minimalist Thesis.
- Therefore, only phase heads may drive operations in syntax.

Since T does seem to be involved in syntactic operations (A-movement), it must possess some uFs.

Therefore, either:

a. T is a phase head
b. The features on T are inherited from the selecting phase head: C (T enters the computation without any uFs, although it might possess the interpretable tense feature)

Chomsky (2007) examines both of these possibilities and concludes that

i. TP cannot be a phase, and
ii. C must transfer its uFs to the next head down: T

The conclusions in (i) and (ii) have to do with timing of three operations:

1. The valuation of uFs
2. The deletion of the valued uFs
3. Spellout at the conceptual-intentional (CI) interface

Chomsky argues that the deletion of valued uFs must happen at the phase level where uFs are valued, i.e. “at the point where all operations within the phase take place, and the Transfer operation [Spellout] therefore ‘knows’ that the feature that has just been valued is uninterpretable and has to be erased at (or before) CI.”

If uFs are not both valued and deleted at the same phase level, at the next phase level, valued uFs will be indistinguishable from (valued) interpretable features, and will not be deleted before reaching the CI interface. This will lead the derivation to crash.

This situation leads to a contradiction:

- On the one hand, a head that possesses uFs must have them deleted at the phase level where they are valued.
- On the other hand, the edge of a phase (the head and the specifier(s)) is not spelled-out (transferred) to the CI interface, by Phase Impenetrability Condition (PIC).
Since only phase heads have uFs, and by PIC, it is precisely the head and the specifier(s) of a phase that are exempt from Spellout, it follows that it will never be the case that valued uFs on a phase head are deleted in the same phase in which they are valued. Hence, such valued uFs will never be deleted.

Consequently, whenever a phase head bears any uFs, the derivation will crash (an obviously unwelcome result).

The FI theory, on which the uFs of T are in fact inherited from C, removes the problem, and at the same time accounts for the fact that T drives syntactic operations.

- T enters the derivation without any uFs, but inherits them from C → ergo, T can drive syntactic operations.
- By transferring its uFs to T, C gets rid of them just in time for them to be valued, and deleted, before the phase is spelled-out → ergo, no offending valued uFs are left on C, and the fact that C is not spelled-out (due to the PIC) is not problematic.
- The assumption that only phase-heads bear uFs remains valid.

### 7.2. PA-BINDING IN CROATIAN OC AND FI

Suppose that FI theory is correct.

29. Derivation of OSC

... Step 4: Transfer \([uφ]\) from embedded C to embedded T

**Step 5: Agree (embedded T^[uφ], PRO)**

Step 6: Build matrix vP
Step 7: Cliticize C onto v
Step 8: Build matrix TP and CP
Step 9: Transfer \([uφ]\) from matrix C to matrix T
Step 10: Agree (matrix T, matrix subject)
??Step 11: Agree (matrix T, PRO)??

Under the FI hypothesis, it is unclear why Croatian OSC infinitives do not display φ-feature agreement on the verb (like subjunctives do), given Steps 4 and 5 of the derivation in (29).
It is also not clear how case transmission, indicated by the possibility of PA binding, obtains, given that under this hypothesis the case-marking of PRO is handled entirely in the embedded clause. (Perhaps case overwriting following Step 11, along the lines of Bejar and Massam (1999)?).

30. Derivation of OOC

…

Step 1: Merge $T^{\text{INF}}$ (no uFs)
Step 2: Merge PRO
Step 3: Merge $C^{[u\phi]}$

**Step 4: Transfer $[u\phi]$ from embedded $C$ to embedded $T$**

**Step 5: Agree (embedded $T^{[u\phi]}$, PRO)**

Step 6: Build matrix ApplP
Step 7: Cliticize C onto Appl
Step 8: Agree (matrix v, matrix object)

??Step 9: Agree (matrix v, C)??

…

Crucially, the derivation in (30) involves the same steps, 4 and 5, that the derivation in (29) does.

In both cases, the case on PRO is assigned/checked by the embedded T, which has inherited $\phi$-features from C.

Most importantly for our purposes, since on the FI hypothesis, PRO is case marked by the embedded T in both OSC and OOC, we do not expect a difference in the behavior of PRO in the two environments with respect to PA binding, contrary to fact.

Thus, if (28) is correct, then it seems to be the case that in Croatian, feature inheritance does not take place in the embedded infinitival complements of OC verbs.

Possibly, feature inheritance applies only when C is the head of a strong phase, subject to the PIC. Infinitival clauses discussed here are probably weak phases, exempt from the PIC.

However, C is needed even here (to bear $\phi$, since T does not, but see Alboiu (2007) for a different view) and is still a phase head, which interacts with elements in the matrix clause.

If feature inheritance does not apply here, then perhaps the null hypothesis should be that it never applies.
8. CONCLUSION

In this talk, I discussed data from PA binding in Croatian OOC environments where the verb takes an infinitival complement.

Such OOC infinitivals contrast with OSC infinitivals in that a PA is not bound in the former, but is in the latter.

I adopted Landau’s (2000, 2006, 2007, 2008) agreement model of control and argued that:

i. The differences in PA binding possibilities are due to different ways in which control obtains in OSC (PRO control) and OOC (C-control).

ii. In particular, I proposed that the subject-oriented PA svoj ‘self’s’ is sensitive to the mechanism involved in the case-marking of the local nominative-marked binder (in our case, PRO):

   o If the potential binder is case-marked by T (PRO control), binding is possible.
   o If the potential binder is case-marked by C (C-control), binding is impossible.

Finally, I discussed the consequences of the conclusions for the theory of feature inheritance (Chomsky 2007), and argued that the FI hypothesis cannot accommodate the contrast in OSC and OOC with respect to PA binding.
References: