

Exhaustive control is not control: Cinque's IP and the raising/control divide

Background: Landau (2000) identifies two classes of control predicates that differ in their ability to support partial control: E(xhaustive) C(ontrol) predicates require a relation of absolute identity between the controller and PRO (1), whereas P(artial) C(ontrol) predicates, given a contextually salient plurality, admit a proper subset relation between the controller and PRO (2).

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| (1a) | *Mary ₁ said that John ₂ managed [PRO ₁₊₂ to eat lunch together]. | IMPLICATIVE |
| (1b) | *Mary ₁ said that John ₂ began [PRO ₁₊₂ to eat lunch together]. | ASPECTUAL |
| (1c) | *Mary ₁ said that John ₂ had [PRO ₁₊₂ to eat lunch together]. | MODAL |
| (2a) | Mary ₁ said that John ₂ hated [PRO ₁₊₂ to eat lunch together]. | FACTIVE |
| (2b) | Mary ₁ said that John ₂ claimed [PRO ₁₊₂ to have eaten lunch together]. | PROPOSITIONAL |
| (2c) | Mary ₁ said that John ₂ wanted [PRO ₁₊₂ to eat lunch together]. | DESIDERATIVE |
| (2d) | Mary ₁ said that John ₂ wondered [PRO ₁₊₂ whether to eat lunch together]. | INTERROGATIVE |

Cinque (2006), observing that EC predicates tend crosslinguistically to be restructuring predicates, proposes that EC predicates are actually functional heads in the Infl(ectional) layer of the clause and hence instantiate monoclausal raising structures (3a) rather than biclausal control structures (3b).

- (3a) John began [_{vP} ~~John~~ to eat lunch]. <--- EC = _{vP}-complementation w/ subject raising
(3b) John₁ wanted [_{CP} PRO₁ to eat lunch]. <--- PC = CP-complementation w/ PRO subject

This proposal has the simplifying consequence that *all* true control predicates are PC predicates. However, Cinque's proposal leaves open two important questions:

- (4) How is it possible to maintain a raising analysis for EC predicates like *manage* which unambiguously enter into a thematic relationship with the surface subject?
(5) Why do IMPLICATIVE, ASPECTUAL, and MODAL predicates restructure (i.e., get realized as Infl heads) but not FACTIVE, PROPOSITIONAL, DESIDERATIVE, and INTERROGATIVE predicates?

This paper argues in favor of Cinque's proposal by showing that (4) and (5) can be adequately answered, and that their proper treatment also accounts for a novel descriptive generalization.

Novel descriptive generalization: The generalization in (6) concerns the relationship between the ordering of Infl heads in Cinque's IP and Landau's EC/PC classification of predicates.

- (6) *The EC/PC-Tense generalization:* EC predicates all have meanings that correspond to heads *below* Tense in Cinque's hierarchy; PC predicates all have meanings that correspond to heads *above* Tense in Cinque's hierarchy.

The evidence for the generalization is given in the table at the end of the abstract: the left column is an abridgement of Cinque's IP in descending hierarchical order. When we match up each Infl head with semantically corresponding predicates, we observe that those above Tense are all classified by Landau as PC whereas those below Tense are all classified by Landau as EC. (Apparent exception: Landau classifies *want* as PC, yet Mod_{volitional} is below Tense. However, Cinque (2006) argues that although *want* realizes an Infl head, it is special in that it can embed a null verb \emptyset_{have} which can itself embed a CP with a PRO subject. It thereby gives rise to PC.)

Analysis: I address the questions in (4)-(5) and account for the generalization in (6) via the three proposals in (7), (8) and (12), the first two of which have precedence in the literature:

- (7) *Tense/Orientation:* Infl heads below Tense are subject/VP-event oriented; Infl heads above Tense are speaker/speech act oriented. (Cf. Hacquard 2010 and references therein.)

For example, Hacquard shows that *Mary had_{deontic} to take the train* is evaluated relative to Mary's circumstances at a time prior to speech time, but *Mary had_{epistemic} to be home* is evaluated relative to the speaker's knowledge at speech time. This split corresponds with independent syntactic

evidence regarding the positioning of the modal relative to Tense: $\text{Mod}_{\text{epistemic}} > T > \text{Mod}_{\text{deontic}}$.

(8) *Raising-binding*: Infl heads may contain as part of their meaning a silent pronoun *pro* which gets bound by the matrix subject. (Cf. Hacquard 2006:130 for a similar suggestion.)

E.g., following Hacquard (2006:130), a raising-only analysis for root modals like *canability* is tenable if, when the subject raises to [Spec,TP], it binds a *pro* which is part of the meaning of *can*:

(9) [TP [DP John₁] [T' T [ModP [Mod *can-pro*₁] [vP ~~John~~ do it]]]]

Together, (7) and (8) entail that if a predicate restructures (i.e., realizes a semantically corresponding Infl head) then only if this Infl head is below T will the subject be able to bind *pro*:

(10) Jay **managed** to do it.

Step 1: subject raises to [Spec,TP]: [TP [DP Jay] [T' T [AspP [Asp *manage-pro*] [vP ~~Jay~~ do it]]]]

Step 2: subject binds *pro*: [TP [DP Jay₁] [T' T [AspP [Asp *manage-pro*₁] [vP ~~Jay~~ do it]]]]

(11) Jay **hated** to do it.

Step 1: subject raises to [Spec,TP]: [MoodP [Mood *hate-pro*] [TP [DP Jay] [T' T [vP ~~Jay~~ do it]]]]

Step 2: subject does not c-command *pro*: subject binding of *pro* fails!

In (11), the subject is not high enough to bind *pro*. I propose that this results in ungrammaticality due to the principle in (12) concerning the realization of predicates in the Infl layer.

(12) *Restructuring rule*: For all verbs V and Infl heads F,

if $[[V]] \subseteq [[F]]$, realize V as F *unless* $[[\dots [F^0 V]\dots]] \neq [[\dots F^0 \dots [V CP]]]$

I.e., 'Realize a verb as a semantically corresponding Infl head unless it results in an interpretation distinct from realizing the predicate as a main verb that takes a CP complement.' Ergo, predicates corresponding to Infl heads above T must be realized as main verbs. (12) follows from a more general competition between economy and expressiveness (e.g., Kiparsky 2005): avoid biclausality in favor of monoclausality (economy), but only if meaning is preserved (expressiveness).

Question (4) answered: *manage* and other EC predicates are raising but contain a silent pronoun *pro* as part of their meaning. *pro* is bound by the matrix subject, simulating a control relation.

Question (5) answered: *pro*-binding by matrix subject is available only for Infl heads realized below T. Because FACTIVE, PROPOSITIONAL, DESIDERATIVE, and INTERROGATIVE predicates correspond to Infl heads above T, they must be realized as main verbs.

Cinque-an head	Corresponding Predicates	Landau's classification
Moodspeech act	say, claim, assert, affirm; promise, offer; ask, interrogate	propositional (PC); desiderative (PC); interrogative (PC)
Moodevaluative	hate, regret, surprised, glad	factive (PC)
Modepistemic	believe, think, know; wonder	propositional (PC); interrogative (PC)
Tense		
Modvolitional	want	desiderative (PC)
Aspterminative	stop	aspectual (EC)
Aspinceptive	start	aspectual (EC)
Modobligation (\forall -deontic)	have, must	modal (EC)
Modability	can, be able	modal (EC)
Aspfrustrative/success	forget, fail / manage, get	implicative (EC)
Modpermission (\exists -deontic)	can, may	modal (EC)
Aspconative	try	modal (EC)
Aspcompletive	finish	aspectual (EC)