How to neutralize a finite clause boundary: 
Phase theory and the grammar of bound pronouns

Thomas Grano
Indiana University
tgrano@indiana.edu

Howard Lasnik
University of Maryland
lasnik@umd.edu

1 Overview

Goals of this talk:

• **Empirical:** Bring together data on an under-documented phenomenon: a bound pronoun in the subject position of a finite complement clause renders the clause boundary transparent to processes ordinarily limited to monoclausal, control, and raising configurations.

• **Theoretical:** Propose an analysis that has repercussions for two areas of grammar:

  – **Phase Theory:** We argue for a “convergence-based” view.

  – **Bound pronouns:** We argue for a version of Kratzer’s (2009) “dual route” analysis.

Outline:

• *Section 2: Core facts*

• *Section 3: Core analysis*

• *Section 4: Some remaining issues*

• *Section 5: Concluding remarks*

2 Core facts

Clause boundaries in raising and control configurations are transparent to processes that cannot ordinarily span a finite clause boundary:

(1) **GAPPING**
   a. Joe reads books and Tim ⟨reads⟩ articles.  
   b. Joe₁ seems $t₁$ to read books and Tim₂ ⟨seems $t₂$ to read⟩ articles.  
   c. Joe₁ claims PRO₁ to read books and Tim₂ ⟨claims PRO₂ to read⟩ articles.  
   d. *Joe claims that Bill reads books and Tim ⟨claims that Bill reads⟩ articles.

(1d) is to be distinguished from the following surface-string-identical and grammatical parse:

(2) Joe claims that [Bill reads books and Tim ⟨reads⟩ articles].

Two properties distinguish the patterning in (1) from typical cases of “restructuring” like Romance clitic climbing:

• **Blind to choice of embedding verb (Grano In press):** seem/claim in (1c)/(1d) can be replaced by any other raising/control verb without affecting grammaticality.

• **The “bound subject” effect:** Finite clauses can be rendered transparent by making the subject of the embedded clause a bound pronoun (Lasnik 2006):
Joe claims that he reads books and Tim (claims that he reads) articles.

Non-subject bound pronouns do not induce transparency:

*Joe claims that Bill gave him books and Tim (claims that Bill gave him) articles.

Similar judgment profiles obtain for a wide range of “quasi-clause-bound” processes:

Pseudogapping (Postal 1974):
Joe claims that he reads books but he doesn’t (claim that he reads) articles.

Inverse scope (Hornstein 1994; Kennedy 1997; Kayne 1998; Wurmbrand 2011):
Some professor claims that he reads every journal. (∀ > ∃)

Antecedent-contained deletion (Hornstein 1994; Kennedy 1997):
Joe claims that he reads every journal Tim does (claim that he reads).

Comparative deletion (Lechner 2001):
More people claim that they read books than (claim that they read) articles.

Multiple sluicing (Merchant 2001; Lasnik 2014):
Someone claims that he’s worried about something, but I don’t know who (claims that he’s worried) about what.


Note: We suspect that the bound pronoun effect is actually gradient, roughly as follows:

* Joe claims PRO to read books and Tim (claims PRO to read) articles.
?Joe claims that he reads books and Tim (claims that he reads) articles.
* Joe claims that Bill reads books and Tim (claims that Bill reads) articles.

The analysis we sketch treats (11a) and (11b) as both grammatical.

3 Core analysis

3.1 Phase Theory

We focus first on the contrast between (12a)/(12b):

*Joe claims that Bill reads books and Tim (claims that Bill reads) articles.
Joe claims that he reads books and Tim (claims that he reads) articles.
A first approximation of an analysis:

(13)  
  a. **Phase-based locality**: Gapping (and other similar processes) are phase-bound.  
  b. **Convergence-based phasehood**: Phases are constituents with no unvalued features.  
     (Cf. Felser 2004. A version of this is entertained also by Chomsky 2000:107 but rejected  
     on conceptual grounds).  
  c. **Valuation-based binding**: Bound pronouns enter the derivation with features that are  
     not valued until the antecedent is merged in.

This analysis captures the contrast between (14a)/(14b) . . .

(14)  
  a. *Joe claims that Bill reads books and Tim ⟨claims [PHASE that Bill reads] articles].  
  b. Joe₁ claims that he₁ reads books and Tim₂ ⟨claims [NON-PHASE that he₂ reads] articles].

. . . but not the contrast between (15a)/(15b):

(15)  
  a. Joe₁ claims that he₁ reads books and Tim₂ ⟨claims [NON-PHASE that he₂ reads] articles].  
  b. *Joe₁ claims that Bill gave him₁ books and Tim₂ ⟨claims [NON-PHASE that Bill gave  
     him₇] articles].

Solution we will offer: Preserve phase-based locality and convergence-based phasehood but refine  
valuation-based binding so that the subject bound pronoun in (15a) has unvalued features but the  
object bound pronoun in (15b) does not (at the relevant stage of the derivation).

3.2 The grammar of bound pronouns

3.2.1 Kratzer’s (2009) minimal pronouns

The puzzle of “fake indexicals”: How to get the semantics to ignore φ-features on my in (16)?

(16) Only I finished my homework.  
     (relevant reading: For all x such that x ̸= speaker, x did not finish x’s homework.)

Kratzer’s (2009) approach:

(17)  
  a. Bound pronouns can enter the derivation as φ-defective “minimal pronouns”.  
  b. Minimal pronouns are bound by verbal functional heads C and v (rather than DP antecedents).  
  c. A minimal pronoun obtains its φ-features in the PF component of the grammar via feature  
     transmission from the functional head that hosts its binder.
Binding/Feature transmission by $v$ (following Kratzer 2009:194):

(18) Joe admires himself.

(19) **Syntax:**

a. $[v_P \text{admires} [DP \phi:]]$

b. $[v_P \text{Joe}[\phi:3sg.m] \ [v[\phi:3sg.m] [v_P \text{admires} [DP \text{himself} [\phi:3sg.m]]]]]$  

(20) **Semantics:**

$$
\begin{array}{ll}
\text{vP} & \\
\text{Joe} & \lambda x \lambda e.\text{agent}(x)(e) \land \text{admire}(x)(e) \\
\text{v} & \lambda x \lambda e.\text{admire}(x)(e) \\
\lambda x \lambda e.\text{agent}(x)(e) & \lambda n \lambda e.\text{admire}(n)(e)  \\
\lambda e.\text{admire}(n)(e) & \lambda x \lambda e.\text{admire}(x)(e)
\end{array}
$$

← by Predicate Modification

← by Predicate Abstraction

← by Function Application

Binding/Feature transmission by C:

- PRO Kratzer 2009; cf. Chierchia 1990
- **bound pronominal subjects of finite complement clauses** ← our suggestion

### 3.3 Bound subjects

(21) Joe$_1$ claims that he$_1$ reads books.

(22) **Syntax:**

a. $[TP [DP \phi:][v_P \text{reads books}]]$

b. $\text{Joe} [\phi:3sg.m] v[\phi:3sg.m] \text{claims} \ [CP \text{that} [\phi:3sg.m] [TP [DP \text{he}[\phi:3sg.m]] [v_P \text{reads books}]]]$

**Crucial point:** The complement clause in (22b) is in the same phase as its embedding verb, thereby allowing cross-clausal gapping, etc., as in (23).

(23) Joe$_1$ claims that he$_1$ reads books and Tim$_2$ (claims that he$_2$ reads) articles.

**Semantics:** The CP denotes a property, and composes with the matrix predicate in a way familiar from the literature on the semantics of control (Chierchia 1984, 1990; Dowty 1985; Stephenson 2010; Pearson 2013):
A consequence: *claim* has to have two denotations (25), one of which can be defined in terms of the other (26) (cf. Grano 2014).

(25) a. \[ [\text{claim}] = \lambda \mathbb{p}_{(st)} \lambda x. \forall w' \in \text{claim}(w, x) : \mathbb{p}(w') \]

b. \[ [\text{claim}'] = \lambda \mathbb{P}_{(e,st)} \lambda x. \forall w' \in \text{claim}(w, x) : \mathbb{P}(x)(w') \]

(26) \[ [\text{claim}'] = \lambda \mathbb{P}_{(e,st)} \lambda x. [\text{claim}](\mathbb{P}(x))(x) \]

If controlled complements are property-denoting, then independent motivation for this kind of alternation comes from the fact that some predicates have both control and non-control uses.

3.3.1 Bound non-subjects

Why can’t *him* in (27) enter the derivation as a minimal pronoun, thereby (erroneously) allowing gapping like in (28)?

(27) Joe \[\phi_{:3sg.m}\] claims that Bill gave *him* \[\phi_{:3sg.m}\] books.

(28) *Joe \[\phi_{:3sg.m}\] claims that Bill gave *him* \[\phi_{:3sg.m}\] books and Tim\[\phi_{:3sg.m}\] (claims that Bill gave *him* \[\phi_{:3sg.m}\] articles.

**Proposal:** C and *v* intervene for each other (*contra* Kratzer 2009).

**Consequence:** (27) cannot be derived from (29).

(29) Joe[\[\phi_{:3sg.m}\]] *v*[\[\phi_{:3sg.m}\]] claims [\[CP\] that[\[\phi_{:3sg.m}\]] \[TP\] Bill [\[vP\] gave [\[DP\] \[\phi_{:3sg.m}\] books]]]

A minimal pronoun inside *vP* can be bound only by *v*, which results in a reflexive:

(30) Joe claims that [\[CP \ldots Bill[\[phi_{:3sg.m}\]] \[v[\[phi_{:3sg.m}\] gave himself[\[phi_{:3sg.m}\] books ] ]]

\[\text{Blocked!}\]
Instead, (27) must be derived from a structure in which the pronoun is $\phi$-complete from the beginning of the derivation and gets bound à la Heim and Kratzer 1998, Büring 2005, or Cable 2005, or else is not really bound (the D-type/E-type approach). Here we illustrate the Heim and Kratzer approach.

(31) **Syntax:**
   a. $[TP [DP Bill] [vP gave him books]]$
   b. $[CP that [TP [DP Bill] [vP gave him books]]]$
   c. Joe $v$ claims $[CP that [TP [DP Bill] [vP gave him books]]]$

(32) **Semantics:**

$\lambda x. \forall w' \in \text{claim}(w, x) : Bill \ gave \ x \ books \ in \ w'$

$\lambda 1 \ \forall w' \in \text{claim}(w, t_1) : Bill \ gave \ him_1 \ books \ in \ w'$

$\lambda p \lambda x. \forall w' \in \text{claim}(w, x) : p(w')$

$\lambda p \lambda x. \forall w' \in \text{claim}(w, x) : p(w')$

Bound pronoun is $\phi$-complete throughout.

$\rightarrow$ CP has no unvalued features.

$\rightarrow$ CP is a phase.

$\rightarrow$ Cross-clausal gapping, etc., ruled out.

4 Some remaining issues

The “entire subject” effect: Subject-internal bound possessors do not induce transparency (33), even though $v$ does not intervene (34).

(33) *Joe$_1$ claims that his$_1$ son reads books and Tim$_2$ claims that his$_2$ son reads articles.

(34) Joe $\phi[\phi:3sg.m] v[\phi:3sg.m]$ claims $[CP that[\phi:3sg.m][TP [DP his[\phi:3sg.m] son] [vP reads books]]]$

Object relative clauses: For Kratzer (2009), relative pronouns are minimal pronouns bound by C. Object relative clauses therefore appear to be a problem for our C/$v$ intervention proposal:

(35) This is the linguist $[CP who C Joe v$ admires $\ldots]$. 
Both of these issues can be resolved with one additional proposal:

(36) **Proposal:** In order for a minimal pronoun to receive features from C, the pronoun must have undergone movement first. (Possibly, this follows from a more general principle that \( \theta \)-positions cannot be feature checking/valuation positions.)

(36) explains the contrast in (37): *he* in (37a) has moved from [Spec,vP] to [Spec,TP], but *his* in (37b) has not moved.

(37)  

a. Joe\(_1\) claims that he\(_1\) reads books and Tim\(_2\) *(claims that he\(_2\)* reads) articles.  
b. *Joe\(_1\) claims that his\(_1\) son reads books and Tim\(_2\) *(claims that his\(_2\)* son reads) articles.

(36) also accommodates object relative clauses: Feature transmission from C to the relative pronoun waits until the pronoun has moved to [Spec,CP], at which point *v* does not intervene:

(38) This is the linguist \( \{_{CP} \text{ who C } \text{ Joe } v \text{ admires } \} \).

5 Concluding remarks

**Central conclusion:** The transparency effects induced by bound pronominal subjects of finite complement clauses provide novel evidence for (a) the convergence-based view of phasehood and (b) the view that some but not all bound pronouns enter the derivation unvalued.

Some questions for further investigation:

- Does the availability of transparency correlate with obligatory *de se*?
  
  (39) Joe claims to have read *Pride & Prejudice*.  
  (40) Joe\(_1\) claims that he\(_1\) read *Pride & Prejudice*.  
  (41) Joe\(_1\) claims that he\(_1\) read *Pride & Prejudice* and Bill\(_2\) *(claims that he\(_2\)* read) *Sense & Sensibility*.  

- Do matrix objects block transparency?
  
  (42) ?Joe\(_1\) told Sam that he\(_1\) reads books and Bill\(_2\) *(told Sam that he\(_2\)* reads) articles.

- Since they are obligatorily bound, minimal pronouns are DEPENDENT VARIABLES in the sense of Giannakidou (2009); do other phenomena involving referential dependency give rise to similar kinds of transparency effects (e.g., subjunctives, on the view that they involve temporal dependency (Giannakidou 2011))?  

- How to account for gradient judgments?

- The account predicts that object shift (to above *v*) and subject-internal bound possessor movement should induce transparency; is this accurate?

- If relative pronouns are minimal pronouns, they should induce transparency as well; is this accurate?
• How do $\phi$-features get onto C? (Cf. Landau 2013.)
• How should the Phase Impenetrability Condition be formulated on a convergence-based view of phasehood?
• Can C/'v intervention and the movement prerequisite on C-binding be reduced to a single condition?
• Are there analogous phenomena in languages other than English?

References

Cable, Seth. 2005. Binding local person pronouns without semantically empty features. Ms., MIT.
Lasnik, Howard. 2006. A family of questions. Handout, USC.