Semantic consequences of syntactic subject licensing:
Aspectual predicates and concealed modality

1 Introduction

Complement control: a single overt argument linked to two distinct participant roles; e.g., *Kim* in (1) names both attitude-holder (matrix subject) and unexpressed subject of complement clause.

(1) Control (same-subject complement)
   a. Kim *wanted* [to read the book].
   b. Kim *was glad* [to leave].
   c. Kim *regretted* [leaving].
   d. Kim *wondered* [how to help].
   e. Kim *claimed* [to be an expert].

Given the distinctness of the two participant roles involved in control, it is not surprising that many control sentences have non-control variants in which each of the two relevant participant roles is linked to its own unique, overtly expressed argument:

(2) Non-control (different-subject complement)
   a. Kim *wanted* [Sandy to read the book].
   b. Kim *was glad* [for Sandy to leave].
   c. Kim *regretted* [Sandy leaving].
   d. Kim *wondered* [how Sandy could help].
   e. Kim *claimed* [that Sandy was an expert].

Puzzle: For at least 3 kinds of embedding verbs, the non-control variants are deviant:

(3) COMMITMENT predicates (in the sense of Sag and Pollard 1991):
   a. Kim *intended* (?for Sandy) to sing.
   b. Kim *tried* (?for Sandy) to sing.
   c. Kim *decided* (?for Sandy) to sing.

(4) Object-control predicates:
   a. Kim *persuaded* Sandy (??for Bill) to sing.
   b. Kim *begged* Sandy (??for Bill) to sing.

(5) Aspectual predicates:
   a. Kim *began* (*for Sandy) to sing.
   b. Kim *continued* (*for Sandy) to sing.

Question: Why do aspectual verbs disallow different-subject complements?

Proposed answer in a nutshell: We need to pay attention to what licenses an overt subject: *for* does this, but also contributes a modal semantics incompatible with aspectual verbs.
Plan for the talk:

1. Show that a raising-only analysis of aspectual verbs is not a viable solution to the puzzle.
2. Argue that for-to infinitives have a modal component.
3. Implement the analysis in a Kratzer-style decompositional approach to embedding.
4. Show how the analysis helps make sense of the aspectual verb data.
5. Scaling up: other complementation options, other languages

Some broader themes:

1. Additional evidence for a Kratzer-style decompositional approach to embedding (Kratzer 2006, 2013; Moulton 2009; Bogal-Allbritten this session) synthesized with long tradition of work on the semantics of infinitives (Bresnan 1972; Stowell 1982; Pesetsky 1992; Portner 1997; Bhatt 1999, and others).
2. Evidence that aspectual verbs (possibly aspect more generally) are either not modal at all or involve a modality importantly different from (other) root modality.
3. Shifting some of the explanatory burden of complementation facts off syntax and onto semantics.

1.1 Before we begin: Some justification for singling out aspectual verbs

Sentences like (6) differ from sentences like (7) along at least three dimensions:

(6) Kim tried (?for Sandy) to sing.
(7) Kim began (*for Sandy) to sing.

1. Degree of unacceptability: (6) is marginally acceptable whereas (7) is fully unacceptable.
2. Interpretability: (6) is interpretable as “Kim tried to bring it about that Sandy sing” whereas (7) has no coherent interpretation.
3. Cross-linguistic uniformity: Some languages (and dialects of English) permit sentences like (6) whereas none to my knowledge admit sentences like (7); see e.g. Mandarin (8) and Greek (9):

(8) Zhangsan kaishi (*Lisi) kai men.
    Zhangsan begin Lisi open door
    ‘Zhangsan began (*for Lisi) to open the door.’

(9) O the Yanis arxise na anoigi tin porta (*i Maria).
    the Yanis began SBJV opens the door the Maria
    ‘Yanis began (*for Maria) to open the door.’

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Table: Crosslinguistic availability of overt embedded subjects (taken from Grano 2015a)

For more on try and its ilk, see Grano 2015a,b; from here on out I focus on aspectual verbs.
2 Against a raising-only explanation for the puzzle

Data like the following show that aspectual verbs can be used as raising predicates:

(10)  
a. It began to rain.  
b. There began to be trouble.  
c. The shit began to hit the fan.  
   (& similar for start, continue, stop, etc.)

If aspectual verbs were always raising predicates (as in Rochette 1999), the puzzle would disappear: In sentences like (11), there would not be enough theta roles to go around:

(11) *Kim began for Sandy to sing.

In what follows, I show that a raising-only analysis is untenable (following Perlmutter 1970; Landau 2013). Aspectual predicates pattern like control predicates and unlike raising predicates w.r.t.:

2.1 Complement drop (Landau 2013)

(12) **Generalization:** Some control predicates admit complement drop; no raising predicates admit complement drop. (Jacobson 1992)

(13) CONTROL
   a. Kim {tried/promised/refused} to read the book but I don’t think Sandy {tried/promised/refused}.
   b. *Kim wanted read the book but I don’t think Sandy wanted.

(14) RAISING
   a. *Kim happened to read the book but I don’t think Sandy happened.
   b. *Kim wound up reading the book but I don’t think Sandy wound up.
   c. *Kim seemed/appeared to be happy but I don’t think Sandy seemed/appeared.
   d. *Kim turned out to need surgery but I don’t think Sandy turned out.
   e. *Kim grew to love Beethoven but I don’t think Sandy grew.

(15) ASPECTUAL
   a. Kim {started/began/continued} to read the book but I don’t think Sandy {started/began/continued}.
   b. Kim {stopped/finished} reading the book but I don’t think Sandy {stopped/finished}.

2.2 Agent-sensitivity

2.2.1 Imperative formation (Perlmutter 1970)

(16) CONTROL
   a. Try/Promise to read the book!
   b. Refuse to help them!
   c. Decide to be great!

(17) RAISING
   a. *Happen to read the book!
   b. *Wind up reading the book!
   c. ?Grow to love Beethoven!

(18) ASPECTUAL
   a. Start/Begin/Continue to read the book!
   b. Stop/Finish reading the book!
2.2.2 Embeddability under persuade (Perlmutter 1970)

(19) CONTROL
   a. Kim persuaded Sandy to \{try/promise/refuse/decide\} to read the book.
   b. Kim persuaded Sandy to decide to be great.

(20) RAISING
   a. *Kim persuaded Sandy to happen to read the book.
   b. *Kim persuaded Sandy to wind up reading the book.
   c. ?Kim persuaded Sandy to grow to love Beethoven.
   d. *Kim persuaded Sandy to seem/tend to be happy.

(21) ASPECTUAL
   a. Kim persuaded Sandy to start/begin/continue to read the book.
   b. Kim persuaded Sandy to stop/finish reading the book.

2.2.3 VP pseudoclefting (Landau 2013)

(22) CONTROL
   a. What Kim did was try/promise/refuse to read the book.
   b. What Kim did was decide to be great.

(23) RAISING
   a. ?What Kim did was happen to read the book.
   b. ?What Kim did was wind up reading the book.
   c. ?What Kim did was grow to love Beethoven.

(24) ASPECTUAL
   a. What Kim did was start/begin/continue to read the book.
   b. What Kim did was stop/finish reading the book.

2.2.4 Compatibility with agent-oriented adverbs

(25) CONTROL
   a. Kim eagerly/reluctantly tried/promised/refused/decided to read the book.
   b. Kim eagerly/reluctantly claimed to be happy.

(26) RAISING
   a. *Kim eagerly/reluctantly happened to read the book.
   b. *Kim eagerly/reluctantly wound up reading the book.
   c. *Kim eagerly/reluctantly grew to love Beethoven.
   d. *Kim eagerly/reluctantly tended to always be late.

(27) ASPECTUAL
   a. Kim eagerly/reluctantly started/began/continued to read the book.
   b. Kim eagerly/reluctantly stopped/finished reading the book.

(28) **Interim conclusion:** Aspectual verbs are raising/control-ambiguous. (Also supported cross-linguistically: see Polinsky and Potsdam 2002 on Tsez and Davison 2008 on Hindi.)
3 The meaning of for-to infinitives

The idea that infinitives have a characteristic semantics is not new:

- relative infinitives: Kjellmer 1975; Bhatt 1999; Hackl and Nissenbaum 2012
- too/Enough infinitives: Hacquard 2005; Nissenbaum and Schwarz 2008; Marques 2012

Bresnan 1972: for-to infinitives express “subjective reason or cause” (p. 80) or “purpose, use, or goal” (p. 81). Furthermore, “The concepts of reason and purpose are semantically related, both implying motivation, and both implying directionality, whether from a source or toward a goal” (p. 81).

Some relevant examples:

(29) PURPOSE/USE/GOAL (often future-oriented)
  a. John wanted very much for Bill to be a doctor.
  b. ?John intended for Bill to be a doctor.
  c. John demanded for Bill to help out.

(30) REASON/CAUSE (often past-oriented, evaluative)
  a. John was thrilled for Bill to get an A on the test.
  b. It was stupid for Bill to be a doctor.
  c. It was illegal for Bill to be a doctor.

(Puzzle: As seen in (31), variants of (30a) that involve a verb rather than an adjective are marginal, unless modalized or habitualized: see Carstairs 1973; Pesetsky 1992; Portner 1997.

(31) a. ??Yesterday John liked for Bill to help.
    b. John always liked for Bill to help.
    c. John would like for Bill to help.

With epistemic verbs, for-to infinitives are ruled out:

(32) a. *John claimed for Bill to be a doctor.
    b. *John believed for Bill to be a doctor.

This distribution seems to fit well with Portner’s (2009) PRIORITY category:

(33) Portner’s (2009) classification of modality
  a. Epistemic
  b. Priority: Deontic, Bouletic, Teleological ← for-to?
  c. Dynamic: Volitional [ability, opportunity, dispositional], Quantificational

HOWEVER, for-to infinitives are acceptable in contexts of dynamic modality as well:

(34) a. It was possible for hydrangeas to grow here.
    b. It was necessary for Bill to sneeze.
Converging evidence from complementation with nouns:

(35) **EPISTEMIC**
   a. *the belief for hydrangeas to grow here*
   b. *the knowledge for hydrangeas to grow here*

(36) **PRIORITY**
   a. the requirement for John to leave
   b. the desire for John to leave
   c. the goal for John to leave

(37) **DYNAMIC**
   a. the ability for John to leave
   b. the opportunity for John to leave
   c. the disposition for John to leave
   d. the potential for there to be trouble
   e. the potential for hydrangeas to grow here

(38) **Interim conclusion:** *for-to* infinitives are compatible with priority and dynamic modality but not epistemic modality.

4 **Implementation**

Following Kratzer (2006), suppose attitude predicates are just predicates of states:

(39) a. $\lambda x \lambda s. \text{belief}(s) \land \text{EXP}(s)=x$
   b. $\lambda x \lambda s. \text{want}(s) \land \text{EXP}(s)=x$
   c. $\lambda x \lambda s. \text{claim}(s) \land \text{AG}(s)=x$

The modality in attitude reports comes from functional heads in the left-periphery of the embedded clause that map “entities that determine intensional content to the set of possible worlds that are compatible with that content” (Kratzer 2013:slide 51).

*These accessibility functions can have selectional restrictions:*

(40) $\emptyset_{\text{say}} = \lambda p \lambda s. \forall w' \in f_{\text{content}}(s): p(w')$
    where $s$ is a mental state or speech event

(41) $\emptyset_{\text{German reportative subjunctive}} = \lambda p \lambda s. \forall w' \in f_{\text{content}}(s): p(w')$
    where “the speaker is not committed to the truth of $p$” (Kratzer 2013:slide 60)

(42) $\emptyset_{\text{sollen}} = \lambda p \lambda s. \forall w' \in f_{\text{content}}(s): p(w')$
    “requires anchors like rumors, reports, claims; rejects mental states” (Kratzer 2013:slide 58)

Bogal-Allbritten (this session) on Navajo:

(43) a. $\emptyset_{\text{sha\text{`}shin}} = \lambda p \lambda s. \forall w' \in \text{BELIEF}(s): p(w')$
   b. $\emptyset_{\text{laanaa}} = \lambda p \lambda s. \forall w' \in \text{DESIRE}(s): p(w')$
   c. $\emptyset_{\text{priority}} = \lambda p \lambda s. \forall w' \in \text{PRIORITY}(s): p(w')$
Let $\text{ROOT}(s)$ be an accessibility function with a selectional restriction that excludes epistemic anchors but allows priority and dynamic anchors.

Then I propose that complementizer *for* has the denotation in (44), combining with an ordinary proposition like (45) and returning a modalized proposition like (46):

(44) \[ [\text{for}] = \lambda p \lambda s. \forall w' \in \text{ROOT}(s): p(w') \]

(45) \[ [\text{Bill to leave}] = \lambda w. \text{Bill leaves in } w \]

(46) \[ \lambda s. \forall w' \in \text{ROOT}(s): \text{Bill leaves in } w' \]

Consequences for complementation:

(47) \[ \lambda x \lambda s. \text{want}(s) \land \text{EXP}(s) = x \land \forall w' \in \text{ROOT}(s): \text{Bill leaves in } w' \quad \leftarrow \text{OK!} \]

\[ \text{want} \]

\[ \text{for} \quad \lambda s. \forall w' \in \text{ROOT}(s): \text{Bill leaves in } w' \]

\(\text{Bill to leave}\)

\text{(wanting states are appropriate anchors for \text{ROOT}; structure is interpretable)}

(48) \[ \lambda x \lambda s. \text{claim}(s) \land \text{EXP}(s) = x \land \forall w' \in \text{ROOT}(s): \text{Bill leaves in } w' \quad \leftarrow \text{NO GOOD!} \]

\[ \text{claim} \]

\[ \text{for} \quad \lambda s. \forall w' \in \text{ROOT}(s): \text{Bill leaves in } w' \]

\(\text{Bill to leave}\)

\text{(claiming states are NOT appropriate anchors for \text{ROOT}; structure is not interpretable)}

5 Back to aspectual verbs

Aspectual verbs give rise to the same kind of ‘imperfective paradox’ behavior that motivates a modal account of the progressive.

(49) John began/continued to cross the street but a bus hit him before he reached the other side.

(50) John began/continued to draw a circle, but he stopped before there was a circle.

Two options:

- Aspectual verbs describe states that determine intensional content (i.e., they are modal), but the modality differs from other kinds in a way that renders it incompatible with $\text{ROOT}$.
- Aspectual verbs describe states that do not determine intensional content (i.e., they are not modal).
Previous literature:

- Non-modal accounts of the progressive: Parsons 1990; Szabó 2004, 2008; Silk 2015 (cf. also Giannakidou 2013)
- Non-modal account of aspectual verbs: Piñango and Deo 2015

Interaction with analysis of \textsc{ROOT}(s):

(51) **Hypothesis A**: \textsc{ROOT}(s) is defined negatively (any kind of modality other than epistemic); aspectual verbs are not modal.

(52) **Hypothesis B**: \textsc{ROOT}(s) is defined positively (priority + dynamic?); aspectual verbs are either not modal or fall into some category of modal outside \textsc{ROOT}(s).

6 Scaling up

6.1 Other complementation options

I have blamed the unacceptability of (53) on the semantics of \textsc{for}:

(53) *John began for Bill to open the door.

But what about other complementation options that also license an overt subject?

*Finite complements:*

(54) *John began that Bill opened the door.

$\rightarrow$ **Explanation**: indicative \textit{that}-clauses require epistemic anchors

*ECM complements:*

(55) *John began Bill to open the door.

$\rightarrow$ **Explanation**: ECM clauses require epistemic anchors as well (Moulton 2008).

*Gerundive complements:*

(56) *John began Bill opening the door.

$\rightarrow$ **Explanation**: ???

HOWEVER:

(57) a. John started Bill smoking.
    b. John kept the candle burning.

More research is needed here.
6.2 Other languages

As stated at the outset, aspectual verbs disallow different-subject complements across diverse languages:

(58) Zhangsan kaishi (*Lisi) kai men.
Zhangsan begin Lisi open door
‘Zhangsan began (*for Lisi) to open the door.’

(59) O Yanis arxise na anoigi tin porta (*i Maria).
the Yanis began SBjV opens the door the Maria
‘Yanis began (*for Maria) to open the door.’

My suggestion: overt-subject licensing in these languages as well is bound up with a modality-introducing functional head, albeit not overt.

7 Conclusions

- Aspectual verbs are bona fide control verbs: they introduce an argument, and this makes their incompatibility with different-subject complements puzzling.
- A promising solution to their incompatibility with for-to complements relies on a decompositional approach to embedding coupled with a restrictive modal semantics for for.
- Consequence: There is no problem with different-subject complements per se; rather, there is a syntax-semantics conspiracy wherein overt-subject licensing necessitates functional material whose meaning conflicts with the aspectual verbs.
- To the extent that all the semantic pieces are independently motivated, this has a welcome, simplifying consequence for the syntax: we can let the syntax generate sentences like John began for Bill to smoke; the semantic component alone accounts for its deviance.

References


Grano, Thomas. 2015b. The logic of intention reports. Ms., Indiana University.


Piñango, Maria Mercedes, and Ashwini Deo. 2015. Reanalyzing the complement coercion effect through a generalized lexical semantics for aspecual verbs. Journal of Semantics VOL:PP–PP.


