Severing the external argument from the aspectual verb

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Introduction

RAISING

INTRANSITIVE

Aspectual verbs are acceptable in a wide range of syntactic/semantic contexts:

- It **began** {raining / to rain}. The war **began**.
- John carefully **began** {opening / to open} the door. CONTROL "COERCION"
- John **began** the book. The general **began** the war. TRANSITIVE AGENTIVE
- 'A' begins the alphabet. TRANSITIVE NON-AGENTIVE

(Cf. also: start, continue, resume, stop, end, finish, ...)

Previous work tends to focus on a subset of these contexts only, e.g.:

- Perlmutter 1970: RAISING, CONTROL, TRANSITIVE AGENTIVE
- Pustejovsky 1995: All except TRANSITIVE NON-AGENTIVE
- Piñango and Deo (2015): All except RAISING and INTRANSITIVE

We propose a modest revision of Piñango and Deo's approach that achieves greater empirical coverage by factoring out the agentive relation associated with the subject in (1-c-e) into a separate morpheme v, unifying *all* of the contexts in (1).

A crucial feature of the analysis is that aspectual verbs are two-place predicates, but their second argument can either be quantified over by Aspect (1-a-e) (with or without a v-introduced agent: (1-c-e) vs. (1-a-b)) or saturated by an ordinary DP subject (1-f).

Piñango and Deo's (2015) core data

Much work on aspectual verbs focuses on sentences like (2), treating (2-a) as basic and deriving (2-b) via coercion (e.g., Pustejovsky 1995; Jackendoff 1997).

- John **began** {reading / to read} the book. VERBAL COMPLEMENT John **began** the book. "COERCION"
- Leading idea of the coercion approach: begin requires an eventive complement.

Piñango & Deo (2015): This approach "fails to explain the broader distributional and interpretational properties of aspectual verbs" (p. 9), given data like (3):

- A fountain **begins** the trail. SPATIAL ORDERING
 - A prayer **began** the banquet. **EVENT ORDERING**
 - Midnight **ends** the day. TEMPORAL ORDERING 'A' begins the alphabet. INFORMATIONAL ORDERING
 - A little porcelain pot **finished** the row. INDIVIDUAL ORDERING

Piñango and Deo's (2015) core proposal

Leading idea: Aspectual verbs select for "structured individuals", i.e., "entities that can be construed as one-dimensional directed path structures (Krifka 1998)".

- $\forall x_{\tau}[\mathbf{struct} \mathbf{ind}_{f_{\langle \tau, \sigma \rangle}}(x) \leftrightarrow [axis(f(x)) \land \forall x', x''] \leq x[x'] \leq x''] \rightarrow$ $f(x') \le f(x'')]]$
 - b. An individual x of any type τ is taken to be a structured individual relative to a function f of any type (τ, σ) iff f(x) is an axis and f is a homomorphism from the part structure of x to the axis f(x). (Piñango and Deo 2015:21)

Piñango and Deo's (2015) core proposal, cont'd

- a. $[\![\text{begin}]\!] = \lambda x_{\tau} \lambda y_{\sigma} : \mathbf{struct} \mathbf{ind}_{f_c}(x) . \exists f'[f'(y) <_{small-init} f_c(x)]$
 - b. begin(x)(y) is defined iff x is a structured individual with respect to the contextually determined function f_c . If defined, begin(x)(y) is true iff there is some function f' (possibly identical to f) such that f'(y) is a 'small' initial subpart of the axis $f_c(x)$. (Piñango and Deo 2015:21)

Example (Piñango and Deo 2015:25):

- This famous perch begins the Appalachian trail.
 - [this famous perch] = p
 - [the Appalachian trail] = a
 - $[\![(6-a)]\!]$ is defined iff **struct-ind**_{\sigma}(a) $(\sigma = \text{spatial trace function})$
 - If defined, $\llbracket (6-a) \rrbracket = 1$ iff $\exists f' [f'(p) <_{small-init} \sigma(a)]$

Extension to "coercion" frame: "inverse thematic functions" f_{aq_i} and f_{th_i} map individuals and time intervals onto the smallest event that they are the agent / theme of at the relevant time interval.

- John began the book.
 - [John] = j
 - [the book] = b
 - [(7-a)] is defined iff **struct-ind** f_{th} . (b)
 - e. If defined, [(7-a)] = 1 iff $\exists f' [f'(j) <_{small-init} f_{th_i}(b)]$

(7-e) says that if there exists a function f' that maps John onto an event constituting a small initial subpart of an event whose theme is the book, then [(7-a)] = 1. So if John is the *agent* of such an event (i.e., if $f_{ag_i}(j) <_{small-init} f_{th_i}(b)$), then [(7-a)] = 1.

Desiderata for a revised account

Coverage of raising and intransitive uses

Piñango and Deo treat aspectual verbs as two-place predicates, yet in (8)–(9), they appear to behave as one-place predicates.

- RAISING
 - The shit **continued** to hit the fan.
 - There **began** to be trouble.
 - It **started** to rain.
 - The rock **stopped** rolling down the hill.
- INTRANSITIVE
 - a. The war **began**.
 - The banquet started.
 - The trouble **continued**.
 - d. The rein of terror **ended**.

The *with*-alternation asymmetry

The transitive non-agentive sentences [x VERB y] in (3) all have paraphrases [y VERB] with x] (10), but not control, "coercion", or transitive agentive sentences (11).

- The trail **begins** with a fountain.
 - The banquet **began** with a prayer.
 - The day **ends** with(/at) midnight.

The row **finished** with a little porcelain pot.

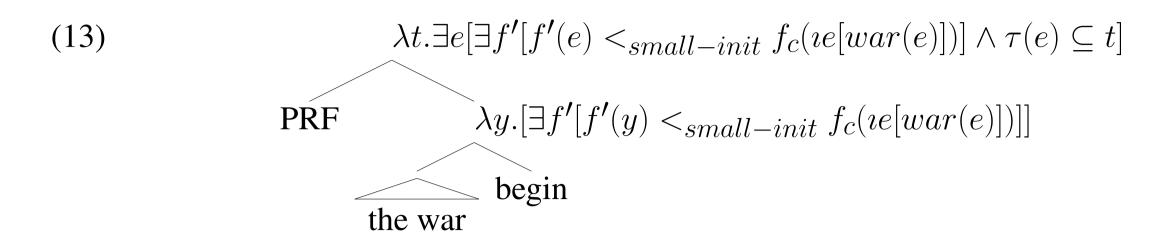
- The alphabet **begins** with 'A'.
- #Reading the book **began** with John.
 - b. #The book **began** with John.
 - c. #The war **began** with the general.

A revised account

Raising and intransitive sentences

Proposal: In raising and intransitive sentences, Aspect quantifies over the y-argument of the aspectual verb:

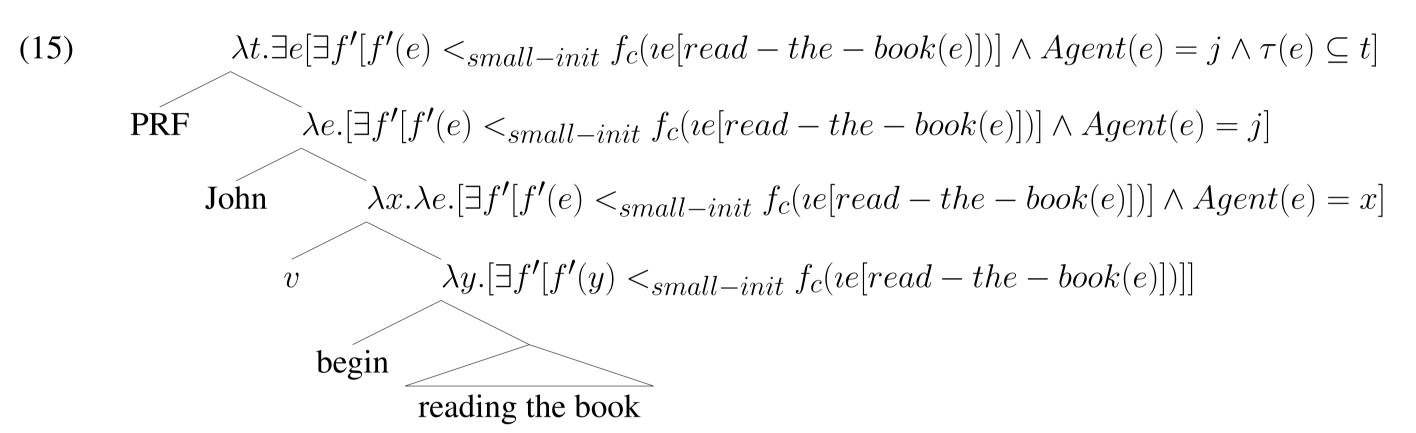
(12)
$$[PRF] = \lambda P \lambda t. \exists e [P(e) \land \tau(e) \subseteq t]$$



Control, "coercion", and transitive agentive sentences

Proposal: In control, "coercion", and transitive agentive sentences, Aspect quantifies over the y-argument, and v introduces the Agent:

(14)
$$[v] = \lambda x \lambda e. Agent(e) = x$$



We hypothesize that only arguments introduced by the aspectual verb itself participate in the with-alternation, thereby explaining the contrast between (10) and (11).

Additional evidence for agentive status of subject in control and coercion sentences:

a. Begin (reading) the book!

IMPERATIVE FORMATION EMBEDDING UNDER persuade

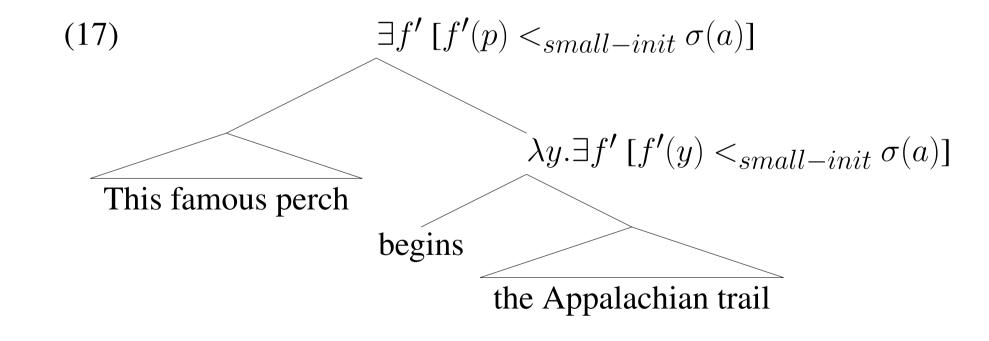
c. John reluctantly began (reading) the book.

I persuaded Jonn to begin (reading) the book.

AGENT-ORIENTED ADVERBS

Transitive non-agentive sentences

Same as in Piñango & Deo:



Consequence: Transitive non-agentive sentences do not combine with Aspect. (The y-argument of the aspectual verb is saturated by the subject, rendering the sentences stative: cf. Katz 2000). Some suggestive data:

- a. ??A fountain was beginning the trail.
 - b. ?A prayer was beginning the banquet.
 - c. ??Midnight was ending the day.
 - d. ??'A' was beginning the alphabet. e. ??A porcelain pot was finishing the row.
- It was beginning to rain.

b. The war was beginning.

- John was beginning to read the book.
- John was beginning the book.
- The general was beginning the war.

Conclusions

If our analysis is on the right track, the syntactic-semantic versatility of aspectual verbs has two sources:

- 1. Optional presence of v, familiar as well in the causative/inchoative alternation (20).
- The window broke.
 - John broke the window.
- 2. The flexibility of the y-argument of the aspectual verb to be dealt with either by Aspect or by a subject DP, a phenomenon not attested elsewhere, as far as we know.