

# Variation & the CI interface: Implications for Event Structure

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## Introduction: a general question

**If** (one aspect of) language variation is the presence vs. absence of an element, be it functional projection (Thráinsson 1996) or a feature (Chomsky 2000, 2004),  
**And** mapping to CI interface is uniform (Chomsky 2004, 2007),

**Are variant properties legible to CI interface?**<sup>1</sup>

**My Aim:** Offer an answer via variation between Slavic and Germanic in inner aspect with respect to the phenomenon in (1), taking Russian & English as representative.

- (1) a. John drank a bottle of wine      in 10 minutes/#for 10 minutes.  
b. John drank wine                      #in 10 minutes/for 10 minutes.

• Internal argument contributes to the aspectual interpretation of the predicate (Verkuyl 1972, Krifka 1989 etc.)

◆ Use *Object-to-event mapping (OTEM)* property as cover term

• Call relevant property of NP a [q] feature for ease of exposition (*q* for *quantity* (Borer 2005), *quantized* (Krifka 1989), *specified quantity* (Verkuyl 1972))

◆ *a bottle of wine* is a [+q]NP and the predicate is **telic**

◆ *wine* is a [-q]NP and the predicate is **atelic**

- (2) a. *Ja pil butylku vina/vino \*za čas/v tečeniji časa.*  
I drank-imp. a-bottle of-wine/wine \*in hour/during hour  
“I drank a bottle of wine/wine \*in an hour/for an hour.”

• Imperfective is atelic independently of [q] feature of internal argument.

- b. *Ja vypil butylku vina/vino za čas/\*v tečeniji časa.*  
I drank-perf. a-bottle of-wine/wine in hour/\*during hour  
“I drank a bottle of wine/wine in an hour/\*for an hour.”

• Perfective is telic independently of [q] feature of internal argument.<sup>2</sup>

**Observation:** English (and Germanic and others) has the OTEM, but Russian (and Slavic generally) does not (see also Borer 2005, Schoorlemmer 1995).

**A more concrete question:** Is this OTEM property legible at the CI interface?

**Or:** Is the aspectual contribution of the NP a semantic one?

**My Answer:** NO. I argue that the OTEM property is a purely syntactic phenomenon.

**Or:** The aspectual contribution of the NP is purely syntactic.

**An implication:** Mereological accounts of event structure (ES) lose motivation.

<sup>1</sup> Fukui (1995:343) reasons that only those functional elements “that do not play any role in LF can be absent in the lexicon of a particular language.” The conclusions drawn here are consistent with this conjecture.

<sup>2</sup> I am ignoring habitual interpretations with imperfectives. I also do not discuss so-called superlexical prefixes.

## 1. A Closer look at the OTEM

- An alternation between [+/-q] NPs affects event structure (ES) properties.

### *Accomplishments*

- (3) a. John drank a bottle of wine #in 10 minutes/for 10 minutes.  
 b. John drank wine in 10 minutes/#for 10 minutes.

### *Achievements*

- (4) a. John caught a bear in 10 minutes/#for 10 minutes.  
 b. John caught wildlife #in 10 minutes/for 10 minutes.

- ◆ There is an alternation between atelic & telic predicate

- If aspectual contribution of NP is semantic, and in Russian, there is no aspectual contribution to ES by NP, then we might expect that ES in English is different from ES in Russian, because the OTEM might add something extra **semantically**.

- ◆ **But**, there is no difference: imperfectives are atelic, perfectives are telic (see 2).<sup>3</sup>

**Table 1. English & Russian Aspect**

English	Russian
ES	ES
OTEM	<del>OTEM</del>

**Possible conclusion:** Since there is no OTEM in Russian, NP is not needed to derive ES; And since, Russian and English have the same ES properties, we might say that **even** in English the NP is not needed for ES (see Borer 2005 for similar reasoning<sup>4</sup>).

**However:** For ES to be legible to CI interface, but not OTEM, they must be independent (set of) properties in English. **That is**, If ES and OTEM were inseparable properties, it would not be clear how one could be legible to CI while the other could not be.

## 2. OTEM & ES are independent properties of English inner aspect

### 2.1 Accomplishments vs. Achievements

- They have different ES properties, evidenced by *stop-control* construction (Dowty 1979)

### *Accomplishment*

- (5) a. John stopped drinking the bottle of wine.  
 b. John stopped eating the slice of pizza.

- *Single event interpretation:* Event began but was stopped before finishing

<sup>3</sup> In fact, there might be reason to think that Slavic has each of the four Vendlerian classes (see for example Filip (1999) Gerhke (2008)).

<sup>4</sup> Borer (2005:219-220) claims that because quantity (i.e. telicity) can arise without the need for an argument, “Event classification is achieved by direct predication of the event argument.” (219) “Asp<sub>Q</sub> and similar structure are first and foremost predicates of the event argument.” (220).

### *Achievements*

- (6) a. John stopped catching the mouse.  
b. John stopped arriving (on time).

• *Iterative interpretation only/No single event interpretation.* What stopped was the repeated action.

**Explanation:** in terms of event bounds; beginning and end to the event.<sup>5</sup>

- ◆ Accomplishments: time elapses between beginning and end of event. Thus, when event begins, there is time to stop it before it reaches the end.
- ◆ Achievements: time does not elapse between beginning and end of event; they occur at the same time. Thus, when event begins, there is no time to stop the event before it reaches the end.

**Observation:** Accomplishments and achievements have different ES properties.

**However,** both show the OTEM property (see 3 & 4).

**Conclusion:** the OTEM property cannot be dependent on the ES properties of the predicate.

### 2.2 Transitive activities & PP-accomplishments

• Well known that transitive activities do not show the OTEM property.

- (7) a. John carried a bag/sand #in 10 minutes/for 10 minutes.  
b. John dragged a log/wood #in 10 minutes/for 10 minutes.

• A [+q]NP *a bag* (7a)/*a log* (7b) does not make the predicate telic, but goal PP can.

- (8) a. John carried a bag into the room in 10 minutes/#for 10 minutes.  
b. John dragged a log into the barn in 10 minutes/#for 10 minutes.

• Goal PP introduces some property X that makes the predicate telic, where the [q] feature could not.

**Conclusion:** Property X of PP is not [q] feature of NP, otherwise they would pattern together.

**Assumption:** Property X of PP is directly related to ES properties of predicate. Minimally, changes activity into (PP-)accomplishment, and not related to OTEM.

- (9) a. John carried sand into the room #in 10 minutes/for 10 minutes.<sup>6</sup>  
b. John dragged wood into the barn #in 10 minutes/for 10 minutes.

• If property X of PPs were a [q] feature, we would not expect this asymmetrical aspectual effect in which the NP “wins out” aspectually over the PP.

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<sup>5</sup> Event bounds in the sense of, for example, Demirdache & Uribe-Etxebarria (2000, 2004, 2007).

<sup>6</sup> In (9) *in x time* indicates when the event began, not when it ends; this is true for all activities in English (Dowty 1979). These predicates are atelic. Further confirmation comes from the progressive-to-perfect entailment (Dowty 1979): *John was carrying sand into the room* does entail that *John carried sand into the room*. However, *John was carrying a bag into the room* does not entail that *John carried the bag into the room*.

**Observation:** There are two independent (sets of) properties of English inner aspect.

- ◆ OTEM property & ES properties
- ◆ Satisfies minimal requirement for ES to be legible to CI interface, but not OTEM

**Conclusion:** The OTEM is not legible to CI interface, while ES is.

**Implication:** The OTEM is a purely syntactic phenomenon. Aspectual contribution of NP is syntactic in nature.

### 3. The analysis of the OTEM

#### 3.1 Distribution of NP participating in OTEM

- Where can [-q]NP make a predicate atelic?

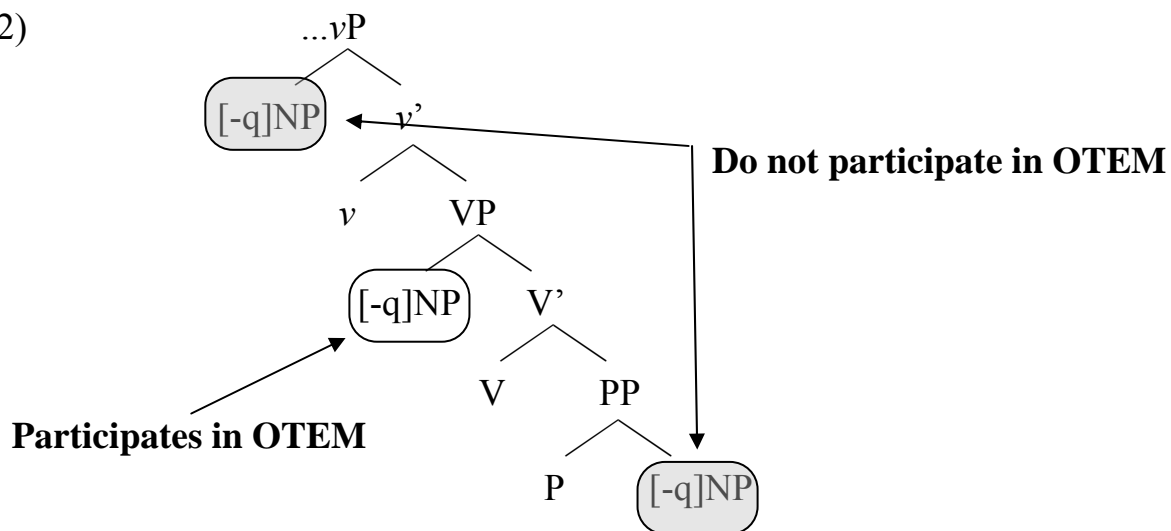
(10) **Wildlife** ate a bag of trash in ten minutes/#for ten minutes.

- ◆ External argument [-q]NPs cannot make predicate atelic (see also Tenny 1987)

(11) John carried a goat into **water** in ten minutes/#for ten minutes.

- ◆ [-q]NP complement of P cannot make predicate atelic (MacDonald 2008a)

(12)



**Observation:** Only NPs in local relation with verb can participate in OTEM

#### 3.2 What is this local relationship with the verb?

##### 3.2.1 It is not semantic incorporation

- Many semantically incorporated nominals cannot serve as discourse antecedents (Carlson 2006, Dayal 2007, Espinal & McNally 2008)

(13) John ate cheese/a piece of cheese last night. It was delicious.<sup>7</sup>

<sup>7</sup> Consider the following: *John is in prison. #It's up north.* vs. *John is in the prison. It's up north.*

- Semantically incorporated nominals are indefinites (Carlson 2006, Dayal 2007, McNally & Espinal 2008)

- (14)a. John drank a pitcher of beer      in ten minutes/#for ten minutes.  
 b. John drank the beer                      in ten minutes/#for ten minutes.

- Jackendoff (1996) observes that the definite does not always give rise to telicity.

- (15) John drank the beer (that was leftover from the party) for a week.<sup>8</sup>

- The (in)definiteness of an NP is independent of its ability to participate in OTEM.<sup>9</sup>

**Conclusion:** The OTEM is not semantic incorporation.

### 3.2.2 *It is not a selectional or thematic relation (Borer 2005)*

- Borer (2005) observes that the OTEM cannot be a thematic or selectional relation with the verb based on so-called *ECM resultatives*.

- (16) John walked the letter \*(to the post office).

- The secondary predicate introduces the direct object; consequently, there is no thematic or selectional relation with the verb.

- (17)a. John walked the letter to the post office      in ten mins./#for ten mins.  
 b. John walk mail to the post office                      #in ten mins./for ten mins.

- The NP introduced by the secondary predicate participates in the OTEM.

**Conclusion:** The OTEM is not a thematic or selectional relation with the verb.

### 3.2.3 *It is a relation with AspP*

- Following others (Borer 2005, MacDonald 2008a,b, Ritter & Rosen 1998, Travis in press, van Hout 2004 etc.) NP establishes a relation with an aspectual projection: AspP.

#### ◆ **Two possible relations**

1. Spec,Head (via movement) (Borer 2005, Ritter & Rosen 1998, van Hout 2004 etc.)
2. Agree (MacDonald 2008a,b, Travis in press)

**NOTE:** Irrespective of the choice, we derive that OTEM is not legible to CI interface; Spec,Head and Agree are not legible themselves (although their effects may be).

- ◆ The NP contributes aspectually by establishing a relation with AspP, not by aspectually contributing directly to the semantics.

<sup>8</sup> Nishida (1994) observes similar facts for Spanish.

<sup>9</sup> Filip (1999) arrives at the same conclusions through an examination of Czech.

## 4. Account of variation

### 4.1 Two more properties dependent on AspP

- There are arguably two other properties dependent on AspP (MacDonald 2008a,b)
  - ◆ Ability of PPs to turn atelic predicate into telic predicate (recall 8)
  - ◆ A multiple events interpretation elicited by bare plurals (see 18 below)

*Sequence of Similar Events (SSE) interpretation of Bare Plurals (BPs)*

- (18) a. John drank sodas in 10 minutes for an hour straight.  
b. John drank soda #in 10 minutes for an hour straight.

→ John drank one soda in 10 minutes, then another soda in 10 minutes, and so on for an hour straight.

**Assumption:** OTEM, SSE interpretation of BPs, and ability of Ps to make predicate telic are dependent on AspP (MacDonald 2008a,b).

*Russian lacks SSE interpretation*<sup>10</sup>

- (19) Mary sjela jabloki #v tečeniji časa.  
Mary ate-perf. apples during hour  
“Mary ate the apples for an hour.”

→ No SSE interpretation; only group interpretation: i.e. *the apples*.<sup>11</sup>

*Russian Ps do not make an atelic predicate telic* (see also Snyder 1995)

- (20) Fermer tasčil brevno/drova v ambar \*za čas/v tečeniji časa.  
The farmer dragged-imp. the log/firewood **in(to) the barn** \*in hour/during hour  
‘The farmer dragged the log/wood in(to) the barn \*in an hour/for an hour.’

**Observation:** English shows these three properties; Russian lacks them (MacDonald 2008b).<sup>12</sup>

**Conclusion:** The proper account of language variation should explain this clustering of properties

### 4.1 The account of language variation

- I follow Thráinsson’s (1996) *Limited Diversity Hypothesis*, one clause of which is that not all functional projections are instantiated in every language. This is consistent with Chomsky’s (2000, 2004) assumptions regarding EPP & OCC features.<sup>13</sup>

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<sup>10</sup> The SSE interpretation of BPs only arises when the predicate is telic: *John owned cars #in a week for a month straight*. Consequently, only perfective verbs in Russian are relevant for testing.

<sup>11</sup> See also Piñon (2001) and Wierzbicka (1967) for similar observations with respect to Polish.

<sup>12</sup> See also MacDonald & Markova (forthcoming) for a discussion of Bulgarian.

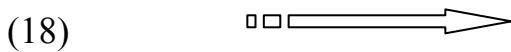
<sup>13</sup> Fukui (1995: 343) reasons about constraints on language variation taking as a starting point the assumption, following Chomsky & Lasnik (1993), that there is no cross-linguistic difference at LF. If true, he concludes that an element attested at LF in some particular language must be assured in the “universal lexicon” and therefore assured in the lexicon of a particular language. This conclusion can vary in function of the precise characterization of what “no cross-linguistic difference at LF” or “uniform mapping to the CI interface” (Chomsky 2004, 2007) means.

- ◆ If OTEM (and other 2 properties) depends on AspP, and if AspP is not present, OTEM (and the other 2 properties) won't be present either.

**Conclusion:** English (and Germanic) has AspP; Russian (and Slavic) does not.

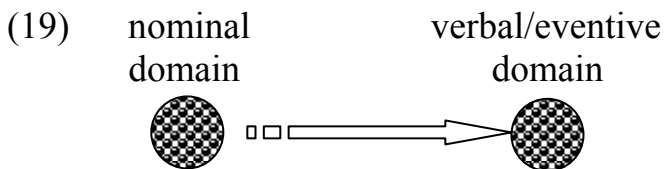
## 5. Implications for mereological accounts of ES

- Mereological accounts essentially conceptualize the OTEM as a transfer of properties from the nominal domain to the (verbal) eventive domain.

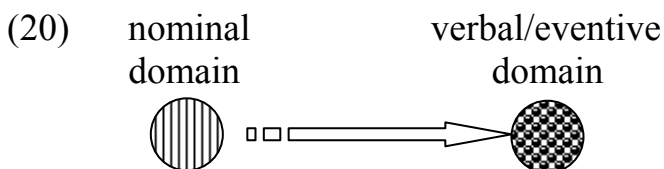


- Given a transfer of properties, it is natural that the same properties are involved; since Bach (1986) mereological/part structure properties have been assumed.

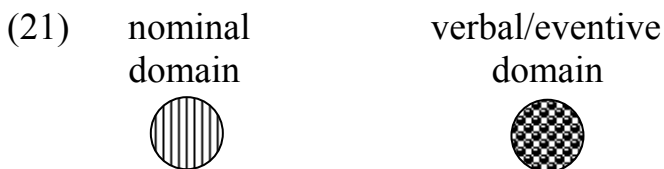
- ◆ cumulativity: *water* → water + water = water  
\*1 *apple* → 1 apple + 1 apple ≠ 1 apple; = 2 apples
- ◆ divisivity: *water* → water / 2 = water  
\*1 *apple* → 1 apple / 2 ≠ 1 apple; = 1/2 an apple



- **However**, from section 2, the relevant nominal property (i.e. [q]) is distinct from the ES property (i.e. X of PP). **Thus**, it is not clear that the same properties are involved.



- **And**, if different properties are involved, it is not clear that there is a transfer at all.



- **Furthermore**, if our conclusions that the OTEM is not legible to CI interface is correct; i.e. aspectual contribution of the NP is not a direct, semantic in nature, but syntactic (see also Borer 2005).<sup>14</sup>

<sup>14</sup> Borer (2005: 19) states: "In short, neither originator nor subject-of-quantity, as such, contribute to the emergence of event classification. [A]rguments...receive their interpretation as an entailment from event type. Most crucially, they do not determine what the event type is." See also Higginbotham (2000).

(22)

verbal/eventive  
domain



- **Consequence:** We are left with the verbal/eventive domain to characterize alone.
  - ◆ Mereological accounts lose *some* motivation, decompositional accounts gain.

## 6. A complexity for mereological approaches to ES

- No simple way to explain the ES properties of achievements vs. accomplishments.

### 6.1. Stop-control construction

- Accomplishments are extended in time and achievements are punctual in time.

*Accomplishment: Single event interpretation:*

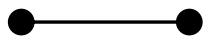
- (23)a. John stopped drinking the bottle of wine.  
b. John stopped eating the slice of pizza.

*Achievements: Iterative interpretation only/No single event interpretation.*

- (24)a. John stopped catching the mouse.  
b. John stopped arriving (on time).

- A decompositional account needs only two event bounds (a la Demirdache & Uribe-Etxebarria 2000, 2004, 2007) one for beginning of event, one for end of event & the relation between the two:

- (25)a. *Accomplishments*                      b. *Achievements*



### 6.2 “Almost”: two interpretations with accomplishments; one with achievements.

*Accomplishments*

- (26)a. John almost drank the bottle of wine.  
b. John almost dragged the log into the barn.
- i. Counterfactual: Event almost began.<sup>15</sup>  
ii. Incompletive: Event almost ended.

*Achievements*

- (27)a. John almost caught the mouse.  
b. John almost arrived (on time).
- i. Counterfactual: Event almost began.  
~~ii. Incompletive: Event almost ended.~~

- ◆ **Only an almost take place interpretation** (counterfactual?/incompletive?).<sup>16</sup>

<sup>15</sup> I take term *counterfactual* from Rapp & von Stechow (1996).

## 7. Talk recap

1. Question: Are variant properties legible to CI interface
2. OTEM is NOT; aspectual contribution of NP is not a direct semantic one
3. Since NP does not play a semantic aspectual role; mereological accounts to ES lose some of their motivation; consequently decompositional accounts gain
4. A complexity for mereological accounts: Achievements vs. Accomplishments
  - ◆ punctual vs. extended nature of achievements/accomplishments
  - ◆ ambiguity vs. lack of ambiguity of *almost*
5. Decompositional accounts seem to be able to handle straightforwardly

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<sup>16</sup> Achievements are essentially atomic in nature.

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