

**Imperfective Aspect as a Modal Operator:
Arregui, Rivero, & Salanova (2014) “Cross-Linguistic Variation in Imperfectivity”**

1. Introduction and Overview

(1) Our ‘Modalized’ Semantics for IMPRV (English ‘PROG’)

$$[[\text{IMPRV VP}]]^{w,t,g} = [\lambda t' : \forall w' \in \text{Inert}(w,t') . \exists e . t' \subseteq T(e) \ \& \ [[\text{VP}]]^{w',t,g}(e) = T]$$

‘In all the inertia worlds stemming from w at t’, t’ is surrounded by a VP-event’

- This semantics gives us the ‘event-in-progress’ reading of the Imperfective, which is the ‘canonical’ reading for IMPRV/PROG in English
- However, in most other languages, ‘imperfective’ morphology also allows for a host of other readings (Deo 2009, Altshuler 2014, Arregui et al. 2014)

(2) The Key Proposal of Arregui et al. 2014

If we slightly alter the semantics in (1) so that it quantifies over ‘situations’ instead of (whole) possible worlds...

... then we can capture these other reading of IMPRV by varying the restrictor of the modal quantification (i.e., replacing ‘Inert’ with other kinds of modal relations!

(3) Situations in Semantics

- Situations are *parts* of possible worlds.
 - They can be spatial parts
 - They can be temporal parts
 - They can be other kinds of parts (non spatio-temporal)
 - *All that matters is that they are parts...*
- Worlds, then, are just ‘maximal situations’
 - Worlds are situations that aren’t a proper part of any other situation
- Notation: $s \leq s'$ = *situation s’ contains situation s*
situation s is a part of situation s’
- Consequence:
Situations, then, cannot exist in more than one possible world, unlike (potentially) events or entities

(4) **Counterparts and ‘Modal Part of’**

- Although a given situation s in world w cannot also exist in world w' , *it can be sufficiently similar to a situation s' in w' that – for all intents and purposes – we can identify s and s'*

Illustration:

- The situation s of my actually voting in the 2012 election only exists in this world...
 - However, in another possible world (one where Romney won that election), there could still be a situation s' of my voting in the 2012 that looks *exactly the same* as the situation that happened in this world.
 - For all intents and purposes, those two situations s and s' are ‘the same’
- Counterpart Situations:
 s' in w' is a counterpart of s in w if s and s' are ‘identical for all intents and purposes’
- Modal Part of
A situation s is a modal part of (\leq_m) a situation s' iff there exists a situation s'' such that s'' is a counterpart of s and $s'' \leq s'$
 - If $s \leq s'$, then we say that s' is an *extension* of s
 - If $s \leq_m s'$, then we say that s' is a *modal extension* of s

(5) **Tense in Situation Semantics**

- Following Kratzer (2011), Arregui *et al.* propose that T-nodes denote topic *situations* (rather than topic *times*).
- Since situations can be extremely abstract, any ‘temporal interval’ or ‘temporal instant’ could be recast as a kind of situation...
 - So no generality here is lost...
 - But, we also now allow the denotation of the T-nodes to possibly be ‘event-like’, comprising entities, their relations, and other ‘stuff’...
 - That maybe becomes useful later ;)

(6) **General Syntax and Semantics for IMPRV**

a. Semantic Assumptions:

- (i) T-heads denote situations (5)
- (ii) VPs are functions from events to propositions (functions from situations to truth-values)

$$[[\text{Dave dance}]]^{\text{w,t,g}} = [\lambda e_e : [\lambda s_s : \text{dancing}(e,s) \ \& \ \text{Ag}(e,s) = \text{Dave}]]$$

b. Syntactic Assumptions: [T_i [IMPRV [VP]]]

c. Key Semantic Proposal Regarding IMPRV

$$[[\text{IMPRV}]]^{\text{w,t,g}} = [\lambda P_{\langle e, \text{st} \rangle} : [\lambda s_s : \forall s' : \text{ACCESSIBILITY-RELATION}(s)(s') . \exists e . P(e)(s')]]$$

- We can get different readings for ‘IMPRV’ by varying the ‘accessibility relation’ that restricts the modal quantification
 - (just like we do for canonical modals like *may*)

2. **Capturing the ‘Canonical Readings’ of IMPRV**

2.1 **The ‘Event in Progress’ Reading (English PROG)**

(7) **Event-In-Progress Imperfective**

$$[\lambda P_{\langle e, \text{st} \rangle} : [\lambda s_s : \forall s' : s \leq_m s' \ \& \ \text{all the events that started in } s \text{ continue in } s' \text{ as they would if there were no interruption} . \exists e . P(e)(s')]]$$

- This is clearly just building into this framework our ‘inertia-based’ semantics in (1)

2.2 **The ‘Ongoing’ Reading (with Statives and Activities)**

(8) **The ‘Ongoing’ Imperfective**

$$[\lambda P_{\langle e, \text{st} \rangle} : [\lambda s_s : \forall s' : s' \leq s . \exists e . P(e)(s')]]$$

- This says that every (actual) part of the topic situation is one where P holds.
 - If P is stative, this holds when a single P-state holds throughout s
 - If P is an activity, this holds when a single P-activity holds throughout s
 - This will also hold if there are multiple P-state/events holding throughout s
 - If P is semelfactive (*sneeze*), that’s the only way this could be true!
 -
- This reading (probably?) doesn’t exist for English PROG, but it’s canonical for ‘imperfective’ morphology throughout the rest of the world

2.3 The ‘Generic’ Reading

(9) The ‘Generic’ Imperfective

[$\lambda P_{\langle \epsilon, st \rangle} : [\lambda s_s : \forall s' : s' \leq s \text{ and } s' \text{ is } normal. \exists e . P(e)(s')]]$]

- This says that in the ‘normal’ parts of the topic situation, there are P-eventualities
 - In a sentence like their (6a), the topic situation is a time 20 years ago
 - (9) would then say that in the ‘normal’ parts of this past time, children watched less TV (than they did now).

(10) Some Discussion

- Thus, the ‘generic’ reading in their semantics is a more restricted version of the ‘ongoing’ reading.
 - Therefore, we might expect that languages have reading (9) only if they have reading (8)... (which looks like it might be the case)
- The readings in (7)-(9) are the ‘canonical’ uses of the imperfective (Deo 2009). For many people, it’s not an ‘imperfective’ unless it has all three of these meanings...
- For Arregui et al., the operators in (7)-(9) are all ‘flavors’ of the imperfective; languages may differ in whether particular ‘accessibility relations’ are possible
 - English only allows the ‘inertial’ accessibility relation
 - Romance, Slavic, and Mebengokre allow all three...
 - But that doesn’t mean that these languages don’t differ with respect to *other* imaginable readings...

3. Beyond the Canonical Readings of IMPRV

3.1 ‘Futurate’ Readings of IMPRV: Plans and Preparations

In some languages, IMPRV can be used if the event hasn’t actually started, but rather is only being planned.

(11) The Mets **are playing** the Royals tomorrow.

(12) [their example (13) in Spanish]

Not all languages allow this, though! For example, there is much variation within the Slavic languages.

(13) [their example (14)]

(14) **The ‘Event-in-Preparation’ Reading (English, Spanish, Bulgarian; *Not* Polish)**

[$\lambda P_{\langle e, st \rangle} : [\lambda s_s :$
 $\forall s' : s \leq_m s' \ \& \ \text{all the events that are in ‘preparatory stages’ in } s \text{ continue in } s' \text{ as}$
 $\text{they would if there were no interruption . } \exists e . P(e)(s')]]$

3.2 The ‘Factual Imperfectives’ of Slavic

In Russian and Polish, you can use imperfective verbs to describe events that were completed (that culminated).

(15) [their example (19)]

(16) **Generalizations They Assume About Slavic Factual Imperfectives (Paduceva 1992)**

- a. Possible for achievements *and accomplishments* (cf. Altshuler 2014)
- b. They are ‘resultative’, focusing upon the fact that the event lead to a result (which holds at the topic time/situation) (they cite Altshuler 2012 for this)
- c. The time of the event is not ordered with respect to any specific time
- d. They do not advance the reference time of the narrative (Gronn 2008)

(17) **Proposed Semantics for Resultative Imperfective**

[$\lambda P_{\langle e, st \rangle} : [\lambda s_s : \forall s' : s \text{ results from } s' . \exists e . P(e)(s')]]$

- This says that all the situations s' that the topic situation s results from have P-eventualities in them.

(18) **Predictions Claimed by Arregui *et al.* 2014**

- a. Reading (17) would entail that there are ‘culminated’/‘complete’ P-events, all holding prior to the topic situation. (16a)
- b. We capture the evocation of ‘results’ (16b)
- c. The time of the P-eventuality is not ‘pinned down’ to a specific time; (17) only entails that it precedes the topic situation. (16c)
- d. (i) Hypothesis:
Sentence advances reference time iff an event is presented as culminating *in* the topic situation.
(ii) Assuming this hypothesis, sentences with (17) would not ‘advance the reference time’ (16d)

(19) **Property Not Predicted by (17)**

Factual imperfectives in Russian are only possible for ‘secondary imperfectives’, the imperfectives derived from perfective stems. (cf., Altshuler 2014)

3.3 The ‘Narrative Imperfectives’ of Romance

In Romance languages, too, you can use imperfective verbs to describe events that were completed (that culminated).

(20) [their example (22)]

(21) **Some Key Differences from Slavic Factual Imperfectives**

- The ‘culminated imperfectives’ in Romance typically occur in connected narratives
- In such narratives, the imperfectives *advance the topic time of the narrative*.
- There is no restriction on Aktionsart; non-telics can also get such uses in Romance.

(22) **Proposed Semantics for Narrative Imperfective**

[$\lambda P_{\langle e, st \rangle} : [\lambda s_s : \forall s' : s' \text{ culminates in } s . \exists e . P(e)(s')]]$]

- This says that all the situations s' that *culminate* in the topic situation s have P-eventualities in them.
- A situation s' *culminates* in a situation s *iff* all the events in s' that *can culminate* do culminate in s'

(23) **Predictions Claimed by Arregui *et al.* 2014**

- a. Reading (22) would entail that there are ‘culminated’/‘complete’ P-events
- b. Reading (22) wouldn’t require P to be a telic event-predicate (thanks to the carefully constructed notion of *situation* culmination)
- c. Given the Hypothesis in (18d), sentences with (22) would indeed advance the topic time of the narrative.

4. Further Cross Linguistic Variation

The system proposed above would definitely predict that not every language will exhibit every attested meaning for IMPRV...

It also predicts that some languages could *lexically distinguish* these meanings...

Arregui *et al.* claim that Mebengokre is such a language.

(24) IMPRV Operators in Mebengokre

- a. [[ma]] = Event in Preparation Reading (14)
- b. [[dja]] = Event in Progress Reading (7)

(25) A Key, Striking Feature of their Semantics for IMPRV

- There is no condition whatsoever that the TT be contained in the ET
- In fact, their semantics for the following readings actually rely on the *opposite* arrangement (i.e., the P-event/state is placed in the topic situation)
 - Ongoing reading
 - Generic reading
 - Narrative imperfective
- They claim explicitly that this is the *right* move...
 - Research on the semantics of IMPRV may well have become stymied by too strict an adherence to the ‘Reichenbachian/Kleinian’ hypothesis...
 - There clearly are cases where IMPRV gets a meaning that goes directly against the grain of the R/K hypothesis:
 - Slavic factual imperfectives
 - Romance narrative imperfectives
 - They claim that these cases aren’t bizarre aberrations, but are telling us something important about the semantics of IMPRV
 - i.e., that the R/K semantics makes too strong a leap from the ‘canonical’ meanings of the imperfective...