When being imperfect is optimal – competition in Russian aspect.

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Outline

- Pragmatic implicatures of the imperfective in Russian
- Tense and aspect at the syntax-semantics interface
- Context sensitivity and optimization in Bidirectional Optimality Theory
- Arguments for a BiOT architecture without markedness constraints.

Desiderata (convention of annulled result)

(1) Kto otkryval_IPF_PAST okno?

who opened window

Who had the window open?

Implicature:

the window is currently closed

Desiderata (counterfactual imperfective)

(2) Srazu reshalo_IPF_PAST partiju Fb3 at_once ended game Qb3

Qb3 would immediately have decided the outcome of the game.

Implicature:

Qb3 was not played in the actual game.

Desiderata (conative imperfective)

(3) Reshal_IPF_PAST zadanie …
Solved task …

I tried to solve the task

Implicature:

failed attempt

A unified semantics?

- Yale conference on ”Imperfective Form and Imperfective Meaning”, April 2009 – different proposals for a unified semantics of the imperfective in languages like Slavic or Romance

A unified semantics? (cont.)

- For the French *imparfait* a unified semantics must capture:
- The progressive
- The habitual
- *Imparfait narratif*
- Counterfactual conditionals
- etc.

A unified semantics? (cont.)

- For the Russian Ipf a unified semantics must capture:
- The progressive
- The habitual
- Examples (1) – (3)
- etc.

Claim

The interpretations in (1) – (3) can only be understood in light of

- alternative forms available for the speaker and
- alternative interpretations available/salient for the hearer.

Claim (cont.)

- (1) – (3) is a result of context sensitive pragmatic strenghtening
- context sensitivity of φ …
- … we only consider alternative interpretations which are salient in the common ground updated with the underspecified representation of φ

How to formalize this in OT?

We observe:

- Competition
- Blocking phenomena
- Division of pragmatic labour
- Pragmatic strenghtening

But how do we put the pieces together?

The basic story of Russian aspect – the perfective

- Aspects as **temporal relations** between the *assertion time* and *event* cf. (Klein 1995).

(4) V 8 chasov Vanja napisal_PF_PAST pis'mo.

(4') At 8 p.m. John wrote a letter.

The perfective (cont.)

- The perfective (”complete event interpretation”): $e \subseteq t$

$[\![\text{Pf}]\!] = \lambda P \lambda t \, \exists e \, [P(e) \wedge e \subseteq t]$

The basic story of Russian aspect – the imperfective

(5) (Kogda ja prishel) v 8 chasov, Vanja pisal_IPF_PAST pis'mo.

(5') (When I arrived) at 8 p.m., John was writing a letter.

The imperfective (cont.)

- The progressive imperfective (”incomplete event interpretation”): $t \subseteq e$

$[\![\text{Ipf\_prog}]\!] = \lambda P \lambda t \exists e [P(e) \wedge t \subseteq e]$

The imperfective (cont.)

- Russian imperfectives with complete event interpretation:

(6) Kto chital_IPF_PAST ”Vojnu i mir”?

Who has read ”War and Peace”?

The underspecified, contex-sensitive imperfective

(7) Ja obedal.

(8) $t \subseteq e$

My **obedali**, kogda u moego druga proizoshel pristup.(Internet)

We **were having dinner**, when my friend had a heart attack.

(9) $e \subseteq t$

Ty segodnja **obedal** v restorane! (Internet)

You **had dinner** in a restaurant today!

Aspectual opposition

(10) Kogda my vstretilis’,
when we met
on … "Vojnu i Mir".
he … “War and Peace”

- chital_IPF (”was reading/had read”) *or*
- prochital_Pf (”had read”)?

Aspectual opposition (cont.)

- Division of labour in (10): IPF vs. PF – progressive vs. ”past perfect”

Partial blocking of the imperfective

- Why not a complete event interpretation of IPF in (10) – ”When we met, he had read W&P”?
- There is a better available form for this interpretation: PF
- There is a better salient interpretation for the imperfective: the progressive

Polarization of form-meaning pairs (first try)

Theorem:
"A complete event interpretation is not available for Ipf whenever a progressive interpretation is possible."

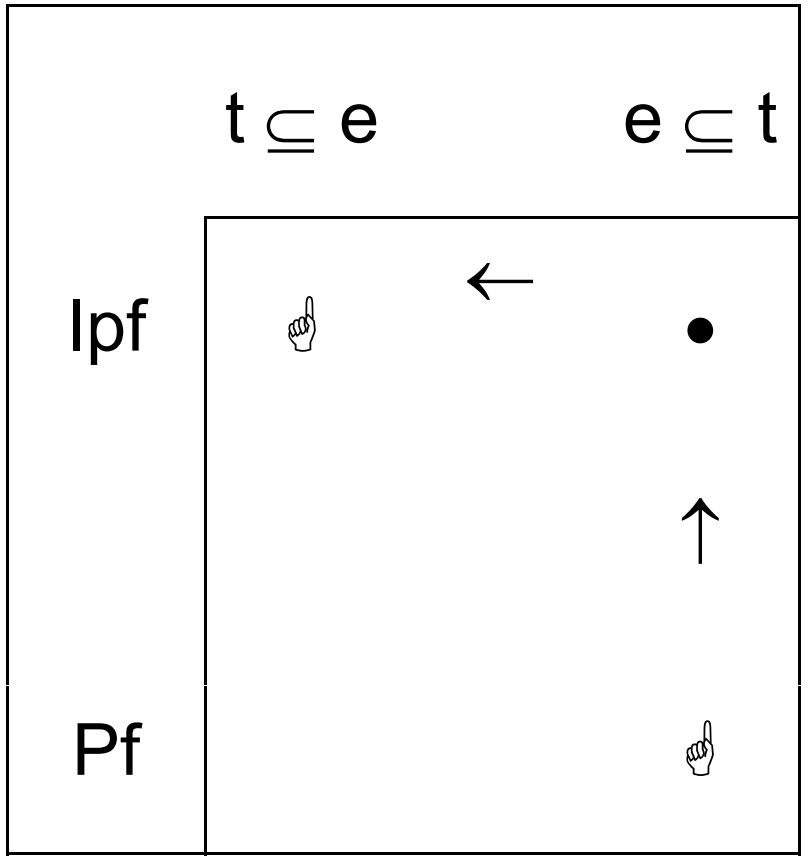


Illustration of theorem

(11) Kogda pozvonil Boris Georgievich, my s Iroj **gotovili** dokumenty.

When Boris Georgievich called, Ira and I **were preparing** (*not available reading:* had prepared) the documents.

Problem

- We said that Pf was ”a better form” for e⊆t
- but we considered lpf as the ”unmarked form” in the previous tableau …
- And why is t⊆e ”better” than e⊆t ?

Solution

- Pragmatic strengthening of the general item follows from Blutner's strong BiOT (1998) with conditional probability.
- Cf. examples from lexical pragmatics: "knife" vs. "cutter"
- Grønn & Sæbø 2008

Polarization of form-meaning pairs (second try)

$P(\cdot/[[\cdot]])$	$e \subseteq t$	$t \subseteq e$
Pf	$\Rightarrow 1$	0
Ipf	.5	$\Rightarrow .5$

Back to (1)-(3): Partial blocking – second round

- “The unemployed form may soon find a new job, generally expressing something closely related to but subtly different from the canonical interpretation that one might have expected” (Beaver & Lee, 2003:140).

The convention of annulled result

(12) Vanja priekhal_PF_PAST.
Vanja has arrived (literally: “Vanja arrived”)

> current result, i.e. Vanja is currently present.

(12’) Vanja priezzhal_IPF_PAST.
Vanja has been here (literally: “Vanja arrived”)

> cancellation of result, i.e. Vanja has left again and is currently absent.

Pragmatic strenghtening of Pf

(13) Kto otkryl_PF_PAST okno?
who opened window.
“Who has opened the window?”

Implicature:

the window is currently open

Pragmatic strengthening of Pf

By associative learning (Benz 2006) it is expected that the interpretation of Pf gets strengthened to include an implicature of the *current relevance of the result state.*

Pragmatic strengthening of Ipf

(1) Kto otkryval_IPF_PAST okno?
who opened window.
“Who had the window open?”

Implicature:

the window is currently closed

A "counterfactual" imperfective (Grønn, 2008)

(2') Srazu reshilo_PF_PAST partiju 22.Fb3.

22.Qb3 immediately decided the outcome of the game.

(2) Srazu reshalo_IPF_PAST partiju 22.Fb3.

22.Qb3 would immediately have decided the outcome of the game.

Generalization

- If a small assertion time (reference time, t) is available/salient, the progressive interpretation blocks other imperfective readings (irrespective of probability distribution).
- When no small t is contextually available/salient, division of pragmatic labour results in second round pragmatic strengthening of Ipf.

The counterfactual imperfective ("second round" – weak BiOT)

P(·/[[·]])	*actual*	*counterfactual*
Pf	$\Rightarrow$1	0
Ipf	.7	$\Rightarrow$.3

The conative imperfective (weak BiOT)

P(·/[[·]])	*actual (complete event)*	*failed attempt*
Pf	$\Rightarrow$1	0
Ipf	.7	$\Rightarrow$.3

Convention of annulled result (problematic!)

P(·/[[·]])	*current result*	*annulled result*
Pf	⇒.7	.3
Ipf	.7	⇒.3

Problem with only conditional informativity

- If both forms are compatible with both interpretations and we don’t assume markedness constraints, what then triggers the division of pragmatic labour?
- Note that imperfectives can morphologically both be less complex than perfectives or more complex than perfectives (simplex IPF and secondary IPF)

”Second round optimization”

- Idea: somehow make use of the link to the first round
  - <PF, e $\subseteq$ t> is bidirectionally optimal in the first round … hence PF is the ”default” (or most salient/frequent) form given e $\subseteq$ t
  - PF is pragmatically strenghtened in the first round and carries the implicature of ”current result” through associative learning (Benz 2006)

Open issues

- What is the relation between the first and second round? (Note that second round optimization is less conventionalized; the implicatures are computed online and cancellable)
- What does the second round look like?
- Triplets of contexts, forms and interpretations?

Open issues (cont.)

- Context sensitivity in Russian aspect is here related to the topic time t.
- For a sentence φ, the competing form-meaning pairs are
  - <TopicTime(φ) + Pf, e $\subseteq$ t>
  - <TopicTime(φ) + Ipf, e $\subseteq$ t>
  - <TopicTime(φ) + Ipf, t $\subseteq$ e> (may be ruled out)

Appendix – arguments for conditional informativity in BiOT

- *“Lamb” and “sheep” are equally brief and the concepts baby sheep and adult sheep are equally informative. We want to be able to say that uttering “sheep” implicates adult sheep, but BiOT gives us no reason to do so.* (Ross, 2006:108)
- Problematic with markedness/harmony constraints, but …

OK with conditional probability

$P(\cdot/[[\cdot]])$	*baby sheep*	*adult sheep*
”lamb”	$\Rightarrow 1$	0
”sheep”	.5	$\Rightarrow .5$

Appendix. Another argument: (van Rooy's scenario)

- *f1* is a lighter expression than *f2*: *f1* > *f2*
- *c1* is more stereotypical than *c2*: *c1* > *c2*.
- The meaning of *f1* is underspecified, while *f2* can only mean *c1*.
- Van Rooy's claim:
- BiOT predicts that *c2* cannot be expressed. Van Rooy takes this as an argument for Game theoretic approaches.

Example: Simplex forms vs. –ing forms in English aspect

(14) I ran in the park (f1)

(15) I was running in the park (f2)

- C = {singular on-going event (c1), habitual-iterative events (c2)}
- Gen = F X C – {<*f2,c2*>}

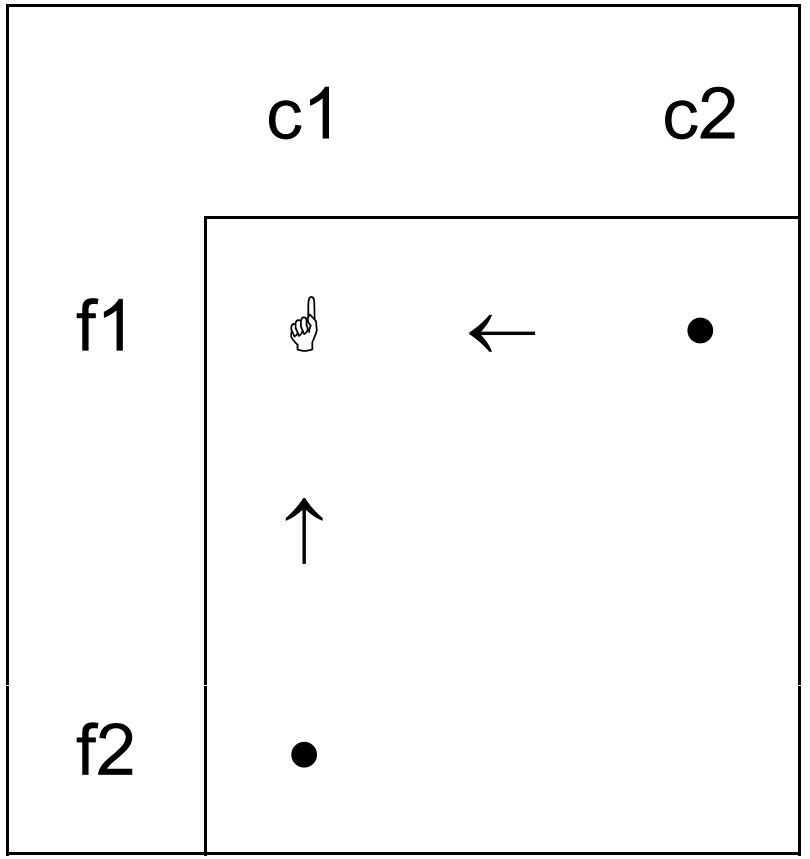
Simplex vs. -ing (cont.)

Assumptions:

- Singularity of events is more stereotypical than plurality, hence c1 > c2.
- Ranking on forms in terms of complexity: f1 > f2.

Simplex vs. -ing (cont.)

- Wrong predictions in BiOT with markedness/ harmony constraints:



OK with conditional probability

$P(\cdot/[[\cdot]])$	*c1*	*c2*
f1	.7	$\Rightarrow$.3
f2	$\Rightarrow$1-complex.	0

References

- See list of references in my papers on Russian aspect and BiOT

http://folk.uio.no/atleg/index.pub.html