Aktionsart vs. Grammaticalized Aspectual Categories: The Interpretation of Tense and Aspect in Russian and English

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Introduction

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We use the same terms of art in our analyses, like 'tense' or 'aspect', but often with no agreement in the formal literature concerning how those terms should be interpreted.
While I believe that there are principles and relations that all human language systems have in common, I am less sure about what level of abstraction those commonalities exist at. Discovering what these are is a work in progress.

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- Secondly, I will present some experimental work comparing the processing of aspectual categories in English and Russian in real time. (With some surprising results!)

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- Secondly, I will present some experimental work comparing the processing of aspectual categories in English and Russian in real time. (With some surprising results!)
- Thirdly, I will make a proposal for deconstructing the tense-aspect ingredients of both languages to come up with an analytic system that makes sense of the experimental and distributional facts. (But I will do in a way that will be unfamiliar, since it will take seriously the non universality of a finegrained functional sequence).

PART I

Some Obvious Stuff We All Know

Talking About Situations in the World: Outputs and Building Blocks

Informational Requirements (OutPut):
Event description (subevents and subevental participants), located temporally (tense) with respect to the speech time (anchoring)
More Formally:
Event Description, P(e) and Θ relationships
Event Run time τ(e) ,
Speech time t* (ANCHOR),
Relation between τ(e) and t* (TENSE)

But then what is Aspect, and why should it even exist?

Aspect in this story is a **topic interval** t (sometimes called the assertion time or reference time), that privileges some portion of τ(e), or bears some systematic relationship to it, which is then the interval that participates in the relationship with t*.

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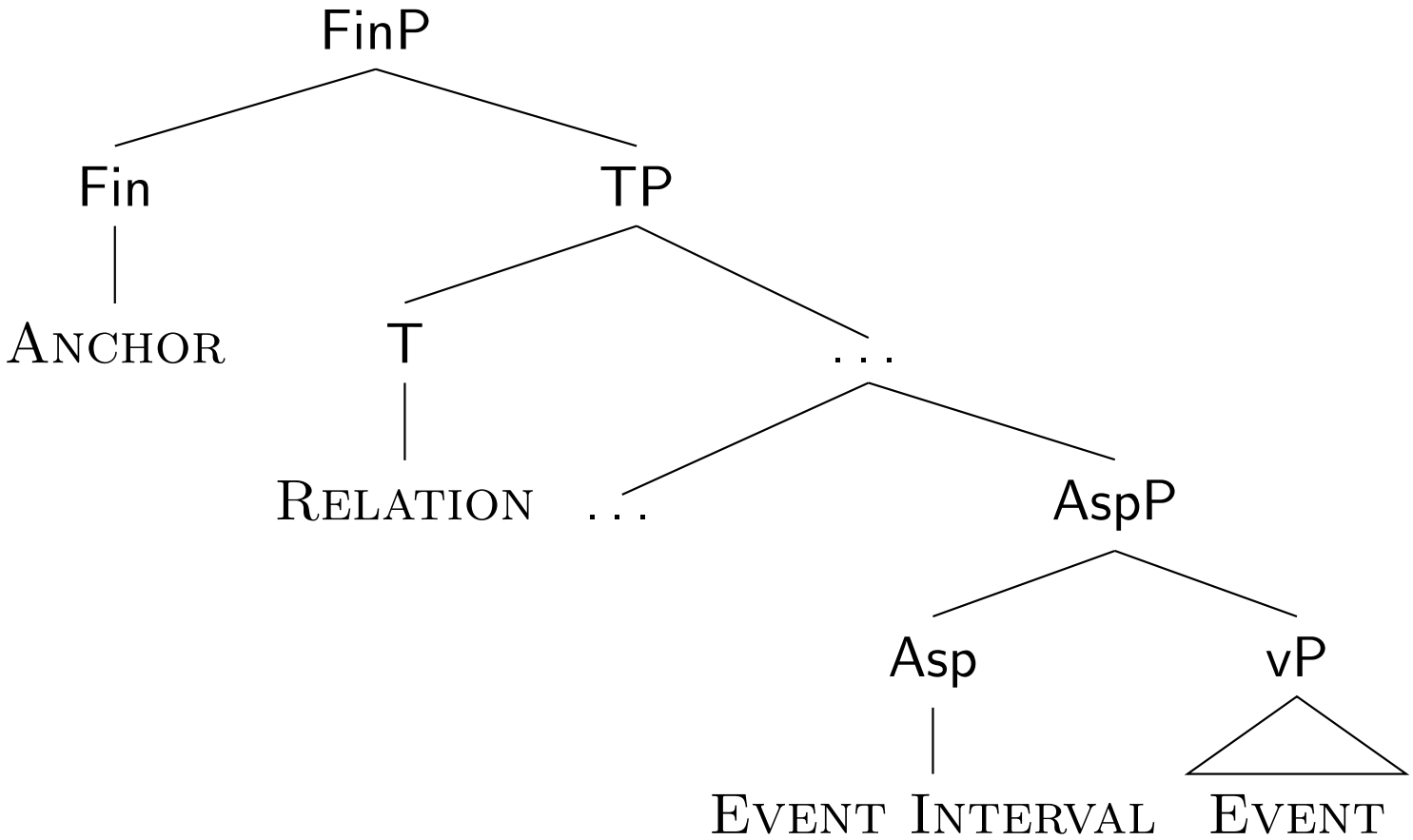
There is no deep reason here why Aspect should be required as a building block, unless we think of it more abstractly as the introduction of the temporal dimension to a non-temporal event description. In which case, Aspect is present not just for 'aspect' marking languages but in all natural languages as a matter of logical necessity if the event is to be temporalized and anchored.
In what follows I will assume that the event domain is purely atemporal and associate Aspect with the run time of the event, τ(e), *and with any function that modifies or selects portions of that run time*.

Mapping to the Syntax



Mapping to the Syntax

I. Event Structure Categories and Operations (in vP).
II. Asp and its feature specification (the establishment of a topic interval, by default the run-time).
III. T, the locus of different specified relations between the reference interval and the anchor.
IV. Fin, the anchor interval

Syn-Sem: Universal Templates?

It is tempting to see the above cartography, and mapping to the logical semantic ingredients as a universal structuring for all languages.
However, I think this would be premature. In fact, I think we should *not* assume that what we see in English or Romance or Russian all conform to the same kind of universal template within the morphosyntax.

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My own hypothesis (see also Ramchand and Svenonius 2014) is that the zones are universal, but that detail within those zones is highly variable across languages.

Locus of Differences

Even if we are right about the logically necessary ingredients, then it should give rise to meaningful questions about *how* each piece of information is provided in each kind of system. For example, some pieces of information might be:
(i) encoded in memorized open class items,
(ii) encoded as functional vocabulary *added* to open class items,
(iii) not morphosyntactically encoded at all, but appear as pragmatic enrichments of underspecified morphosyntactic structure.
In addition, when it comes to morphosyntactically encoded information itself, this can be at varying levels of generality/specificity.

The English Progressive vs. the Russian Imperfective

(See Minor and Ramchand 2018)

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When it comes to expressing ongoing activities, the progressive in English and the imperfective in Russian appear to be equivalent constructions.
It is often claimed that the English progressive is 'imperfective', or conversely that the Russian imperfective has the 'progressive' as one of its core usages.

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It is often claimed that the English progressive is 'imperfective', or conversely that the Russian imperfective has the 'progressive' as one of its core usages.
However, if we look at the morphological constructions themselves in the two languages, there are a number of well known and obvious differences.

Different Range of Interpretations

Firstly, the English progressive does not allow a generic/habitual interpretation, while the Russian imperfective does.

(1) a. Pete is eating apples. *only ongoing*

b. Petja est jabloki.
Pete eat.IMPF.PRS apples
'Pete is eating/eats apples.' *ongoing/habitual*

Different Selectional Properties

Secondly, the English progressive is famously incompatible with lexical statives, while the 'imperfective' in Russian is precisely the shape that statives show up in.

(2) a. *The student is knowing the answer.

b. Učenik znaet otvet.
student know.IMPF.PRS answer
'The student knows the answer'.

Perfective vs. Imperfective in the Descriptive Literature

Main Descriptive Features of the Perfective:
(i) A verb in the perfective advances the narrative time in the context of a discourse.
(ii) A verb in the perfective entails the completion of the event.
(iii) A perfective verb makes salient the result portion of an event, while the imperfective marked verb focuses on, or makes salient the ongoing portion of an event.

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Warning: The fact that traditional grammars use the same classificatory label, does not mean that we are actually dealing with the same phenomenon.

Kleinian Formulas

Under one standard style of formalization, aspectual categories combine compositionally with predicates of events, to give a property of intervals (The Assertion time, or 'Reference'. time) which bear a particular relation to the run time of the event. The relations given by the imperfective and perfective values of Asp are shown in IPFV and PFV respectively.

(3) a. $[\![\text{ IPFV }]\!] = \lambda P_{<v,t>}\ \lambda t \exists e[P(e)\ \&\ \tau(e) \odot t\ ]$

b. $[\![\text{ PFV }]\!] = \lambda R_{<v,<v.t>>} \lambda t \exists e,s[R(s)(e)\ \&\ \tau(e) \odot t\ \&\ \tau(s) \odot t\ ]$

From Tatevosov 2018 (Davidsonian interpretation of Klein 1995).

Does English Past Tense Express IMPF or PFV, or neither?

So according to this system, we now have a number of different places where relevant information is encoded:
Aktionsart: What lexically specified aktionsart categories are found in the language?
Aspect: What are the different relations possible between τ(e) and TopicTime/AssertionTine t ?
Tense: What are the different relationships possible relating t to the Anchor?
It is generally taken for granted however, that the Anchor time is somehow always the deictic now, or t*.
It is also generally assumed that the relations under T come from a restricted universal set.
What about the relations under Asp? Are they similarly restricted? Does the English past tense spell out 'same' relation in Asp as the Russian perfective aspect? (at least with accomplishment predicates)

Aspect in English

Just as the English past progressive is the best translation for the ongoing reading of the Russian imperfective past, so too is the simple past often the best translation for the Russian past perfective, especially in narrative contexts. Specifically, if we consider the sentence in (1), English uses the simple past followed by the past progressive while a Russian translation would use perfective and imperfective past respectively.

(4) La policía lo detuvo cuando
The police him stop.3S.PST.PFV when
viajaba a toda velocidad.
travel.3S.PST.IPFV at all speed
'The police detained him when he was traveling at full speed'

Aspect in English

In fact, the English simple past (putting aside states) is most commonly analysed as a kind of perfective, which presents the event as a completed whole (Martin 2019; Martin and Gyarmathy 2019; Wurmbrand 2014). The alternative view (e.g. de Swart 1998)sees the English simple past as aspectually underspecified, its interpretation reflecting the lexical verb type it attaches to. Even with this caveat, however, the expectation would be that with lexical verbs of the accomplishment type (i.e. the type that lexically encodes a telos as in Dowty 1979), the past tense should be interpreted perfectively, while the past progressive would be required for an ongoing interpretation.

Claim in the Literature (On Accomplishments):
English SIMPLE PAST = perfective
English PAST PROGRESSIVE = imperfective

Differences in Entailment Judgements

There are some recent behavioural studies in the literature which suggest that the English past does not evoke entailments of completion to the same extent as other standard perfectives (Jeschull 2007; Arunchalam and Kothari 2011).

Differences in Narrative Progression

When it comes to narrative progression, English makes a deep cut between stative vs. dynamic eventualities. Stative eventualities trigger overlap with respect to a previous dynamic assertion, while dynamic eventualities advance the narrative time.

(5) John woke up. He was covered in sweat. He got out of bed and walked around. The weather was extremely hot.

Differences in Narrative Progression

In Russian (and in Romance) on the other hand, the cut lies between perfective and imperfective. A perfective sentence advances the utterance time, while an imperfective one produces overlap.

(6) Petja posmotrel^{pf} v okno. Po ulice ehalo^{impf} taksi. Petja zadörnul^{pf} zanaveski.

'Pete looked out of the window. A taxi was driving up the street. Pete closed the curtains.'

This major difference is discussed in detail by Bohnemeyer and Swift (2004), who propose it as a major typological parameter distinguishing between language systems— telicity sensitive systems vs. dynamicity sensitive systems.

PART II

An Experiment Showing Some Pretty Surprising Stuff

The Visual World Paradigm and Aspect

The hypothesis is that since an event *looks different* at different points during its temporal unfolding, different aspectual forms in a language will make salient visually different mental representations of the same event.

Eye tracking while listening to a linguistic stimulus is a by now well established method for tracking speakers focus of attention.

Aspect marking on lexical verbs is a linguistic device that is thought to be relevant to precisely the question of which portion of the event is being singled out in the description.

Aspect and the Visual World

Picture Matching tasks in this area deliberately use two different types of static visual representation: a snapshot of the ongoing event; or a snapshot of the immediate aftermath of the event.

The idea is that aspectual marking makes salient a particular dimension of an event, and that eye tracking in a picture matching paradigm tracks:
(i) the nature of that focus, and
(ii) the time course of when that choice is made.

Previous Psycholinguistic Work

In the literature, there is robust confirmation of the theoretical intuition that the different categories of perfective vs. imperfective have the effect of 'focusing' on a different conceptual portion of the event description.

Imperfective aspect focuses on the in-progress, activity stage of an event, while Perfective aspect triggers a representation of the event as a completed whole, highlighting the final stage and/or the result (goal) state of the event.

(Madden & Zwaan 2003; Ferreira et al 2007; Madden and Therriault 2009; Zhou et al 2014)

Our Study: General Description

Minor, Mitrofanova, Guajardo, Vos and Ramchand, (2021) We conducted 2 parallel experiments with Russian and English speakers, all sharing the same experimental design. In all cases, we used accomplishment predicates and reused the picture stimuli as far as possible. After a simple context sentence, speakers heard sentences of their native language varying according to the perfective/imperfective modulation as discussed above, and were presented with a pair of pictures. They were asked to choose which picture best matched the sentence they heard, and their offline responses were recorded. But in addition, we tracked the participants' eye movements while they were listening to the target sentences.

Predictions for Russian

Our predictions for Russian, in line with previous offline behavioural studies was that speakers would categorically chose the completed action picture for perfective and the ongoing action picture for the imperfective.

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We expected eye movements to rapidly launch to the target picture, even before the offset of the verb since the aspectual distinction in Russian is encoded fairly early in the word, and always before tense inflection.

Predictions for English

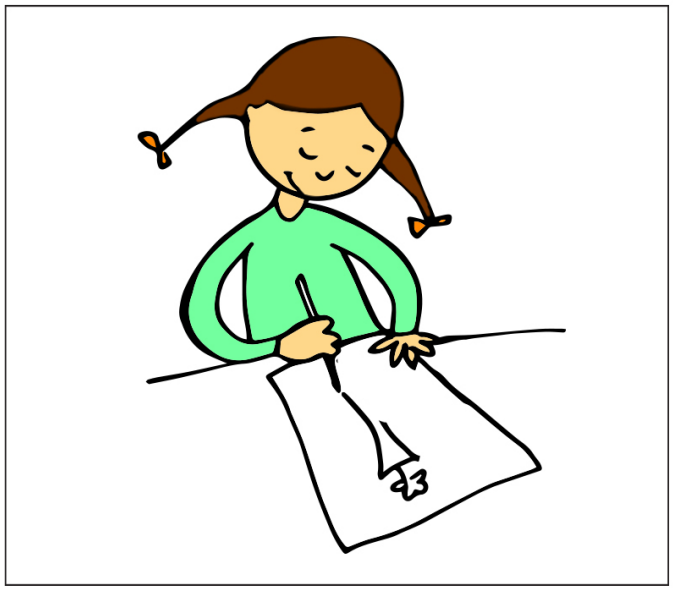
While many formal semanticists analyse the English past as a perfective past when found on accomplishments, we were sufficiently suspicious based on the controversies in the literature and the differnt distributional properties noted above.

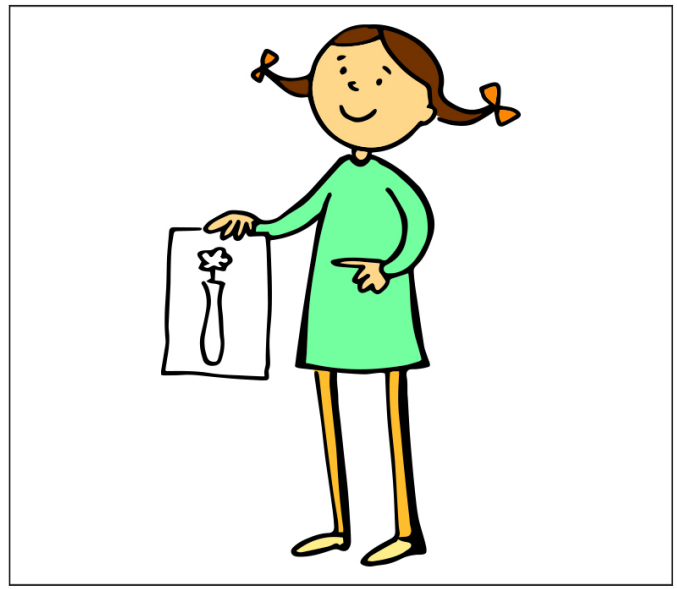
Predictions for English

While many formal semanticists analyse the English past as a perfective past when found on accomplishments, we were sufficiently suspicious based on the controversies in the literature and the differnt distributional properties noted above. Because of this, we were unsure whether the English past tense would pattern with the two other languages when it came to eye tracking and focus on the result state of the eventuality.

Experiment 1: Russian

124 adult Russian speakers participated in the Russian version of the experiment (m.a. = 22).
The experiment included 24 test items consisting of a visual display and an audio stimulus. The visual display involved two pictures presented on a screen side by side. One picture represented an ongoing event (Fig. 1a), while the other represented the corresponding completed event (e.g. the result state that obtained once the action was complete, cf. Fig. 1b).





The Experiment: Russian

The audio stimuli included a preamble and a test sentence, and were recorded by a female native speaker of Russian in an audio-proof booth. The preamble sentence provided a short description of a scene in the past tense (e.g. *It was a bright and sunny day*, *It was the first period at school*, etc.), and was intended to create a narrative context for the test sentence.

(7) a. Devočka risova-la tonkuju vazu.
girl draw.IMP-PST thin vase
'The girl was drawing a thin vase.'

b. Devočka narisova-la tonkuju vazu.
girl draw.PFV-PST thin vase
'The girl drew a thin vase.'

The Experiment: Russian

All test items used in the experiment involved telic predicates, or *accomplishments*, i.e. predicates that represent events consisting of a process stage and a well-defined result stage (Vendler 1967; Dowty 1979). In the Russian experiment, the test items were selected so that half of the items involved verbs in prefixal aspectual pairs (i.e. an un-prefixed imperfective verb and a prefixed perfective verb) and the other half involved verbs in suffixal aspectual pairs (i.e. a prefixed perfective verb and a prefixed+suffixed imperfective). This was done in order to test whether the time course of aspectual processing was influenced by the specific location of aspectual marking within the verb (prefix vs suffix). The results of this analysis are reported in Minor et al (2020).

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Minor et al 2020 found earlier latencies for prefixal aspectual pairs as compared to suffixal aspectual pairs.

Results: Russian (Offline)

The behavioural responses were at ceiling, with perfective verbs eliciting a choice of the result/completion picture and imperfective verbs a choice of the ongoing picture.
A mixed effects logistic regression with subject and item as random effects showed no effect of aspect on this result.

Results: Russian (Online)

- We binned the data in 50ms windows.
- We binarized the dependent measure.
- *cluster-based permutation analysis* to identify consecutive clusters of time bins where the difference between the aspectual conditions was significant ($\alpha = 0.05$, Maris 2007). This method offers a number of advantages in the analysis of Visual World eye-tracking data: it provides correction for multiple comparisons without the loss of statistical power, does not inflate the rate of Type I errors due to autocorrelation observed in the eye-tracking data, and provides information on the temporal localization of the effects without relying on an arbitrary selection of time windows for analysis (Yang 2020; Huang 2020; Hahn 2015; Oakes 2013)

Results: Russian (The Effect of Aspect)

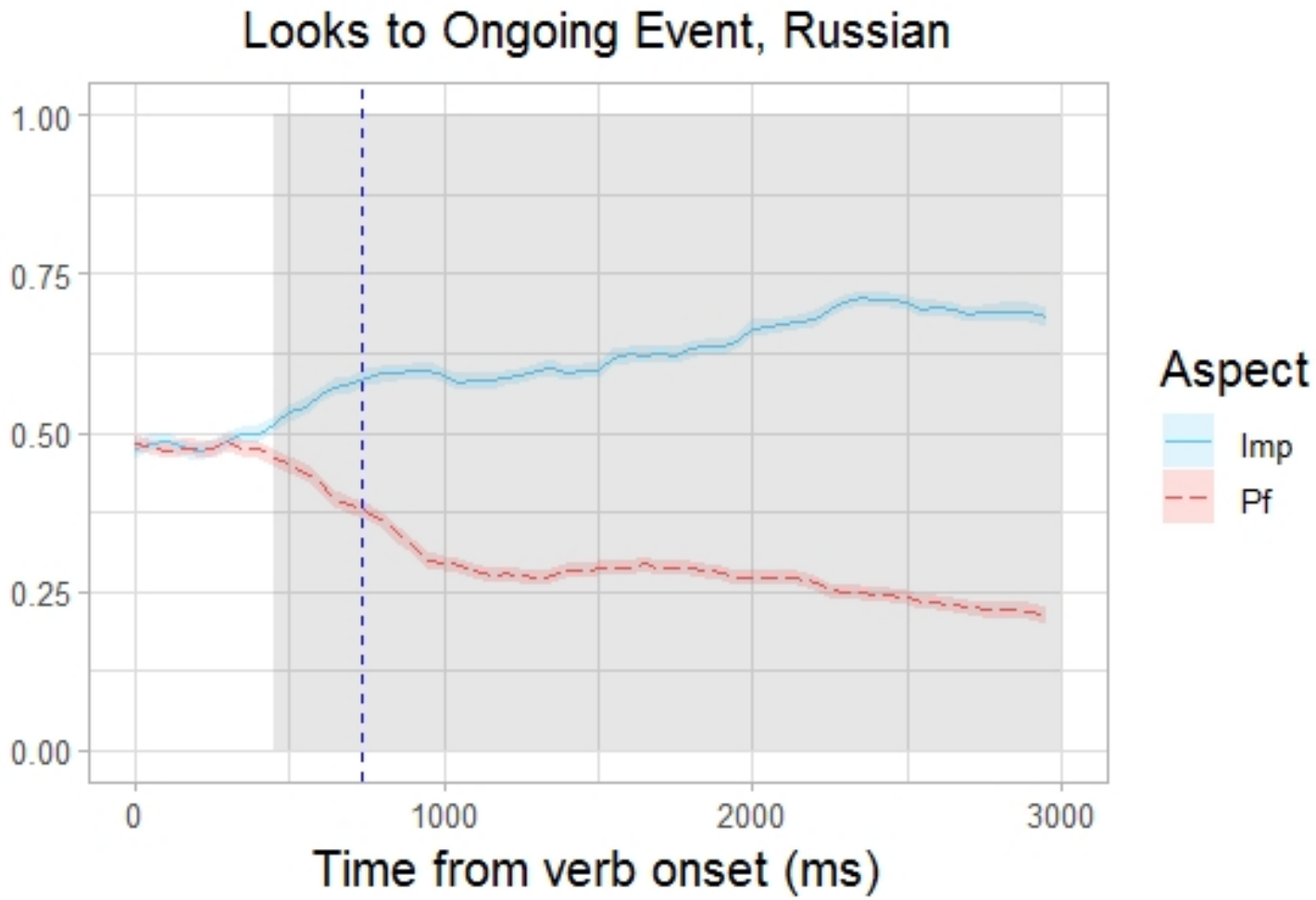


Figure: Proportion of looks to the Ongoing Event picture by aspectual condition calculated in 50 ms time bins starting from the verb onset. The dashed vertical blue line represents the average verb offset. The average

Russian: Eye Movements by Looks to Target

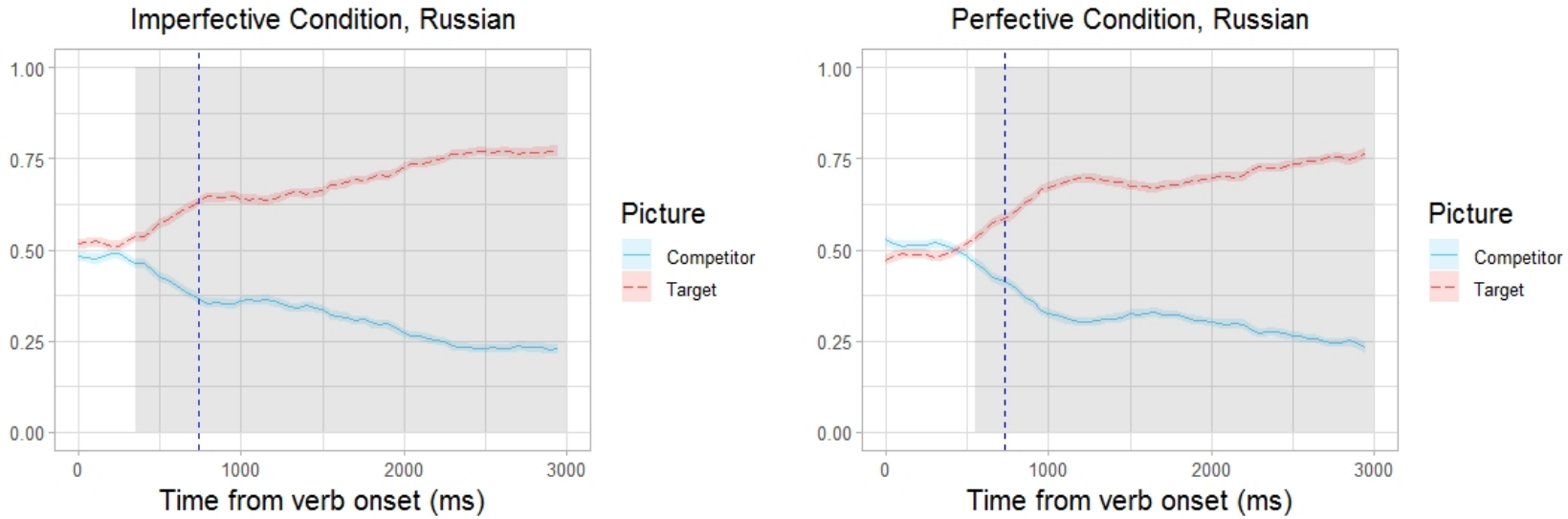


Figure: Russian experiment: Proportion of looks to the Target and Competitor pictures in the Imperfective and Perfective conditions. Shading represents the time windows where the probability of looks to the Target picture was significantly above chance. The dashed vertical blue lines mark the average verb offsets in the two conditions.

Eye Movements By Looks to Target

The analysis revealed that in the Imperfective condition the probability of looks at the Target picture was significantly above chance in the time window from 350 to 3000 ms after the verb onset ($z = 463.09, p < 0.01$, represented by shading in Fig. 3). In the Perfective condition, the probability of looks at the Target picture was significantly above chance in the time window from 550 to 3000 ms after the verb onset ($z = 418.95, p < 0.01$).

Experiment: English

Participants: 35 adult English speakers were tested in Edinburgh (Scotland). A further 31 adult native English speakers were recruited and tested in Norway (Trondheim and Troms), giving a total of 66 participants in the English version of the experiment (m.a. =). All the participants tested in Trondheim and Troms spent less than 2 years in Norway prior to the experiment.

Materials: As in Experiment 1, all the target sentences involved accomplishment predicates. However, the test items were selected in such a way as to avoid particle verbs (e.g. *blow up*, *chop down*, etc.). As a result, 18 out of the 24 test items were shared between the Russian and English versions of the experiment. The controls were set up as for Russian except that since the English version of the experiment did not include an additional predictor corresponding to the type of aspectual pair in Russian, we only needed to create 2 lists and not 4.

Experiment: English

Fillers: Each list included 24 fillers. As in Experiment 1, the filler items involved two pictures representing different event types. The preambles used in the filers were the same as those used in the test items. The filler target sentences were constructed slightly differently as compared to Experiment 1. Half of the the filler items included a construction with the auxiliary *be* that described a completed event (e.g. *Grandma was successful in cracking open the nut*). The other half of the fillers involved a construction with a lexical verb in the past tense that described the initial or intermediate stages of an event (e.g. *The girl began to drink a glass of milk*) The fillers were designed this way to prevent an experimental bias effect whereby the presence of the auxiliary *be* would be uniquely associated with one type of picture.

Results: English (Offline)

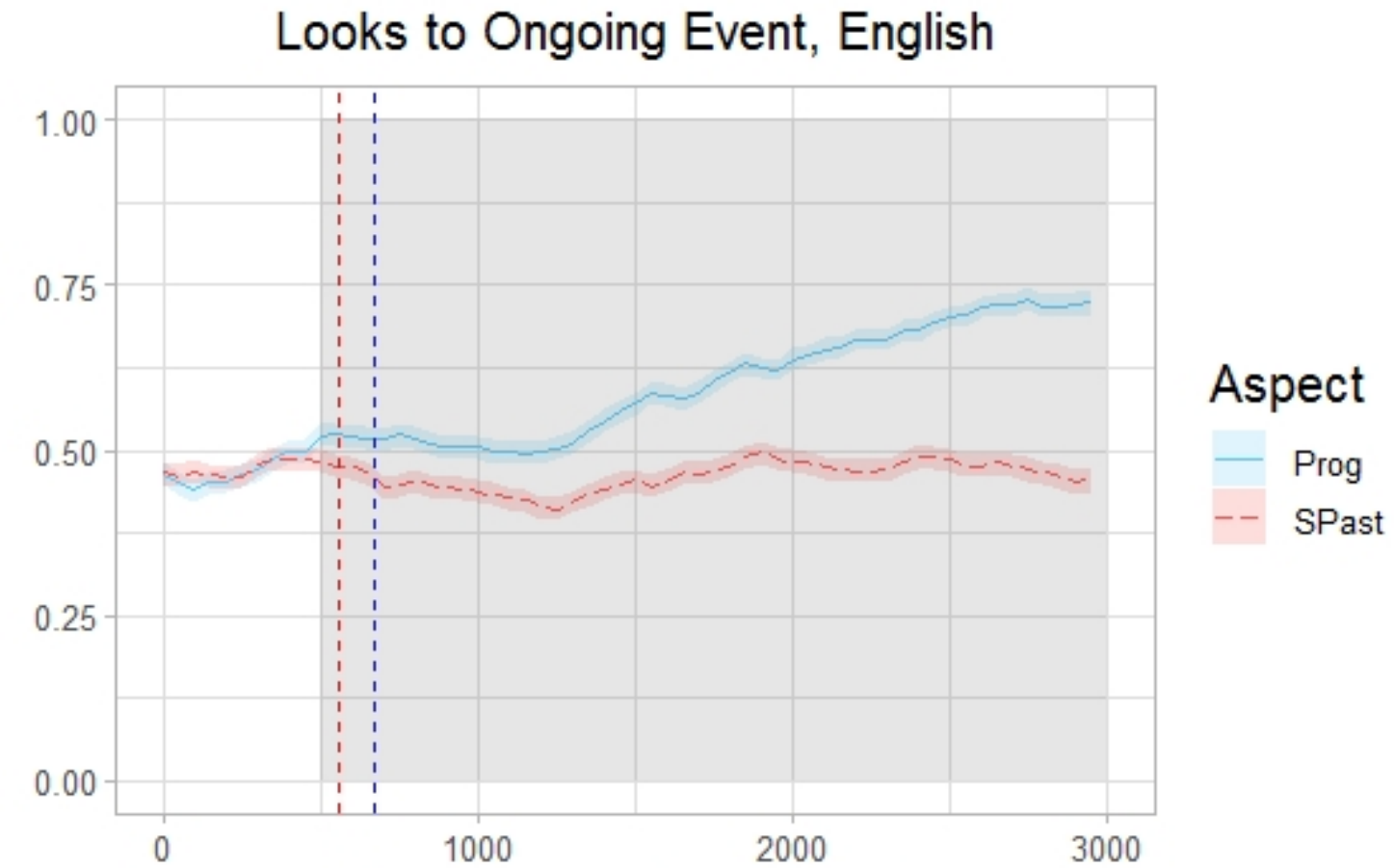
•The participants exhibited an at-ceiling preference for the Ongoing Event picture in the Past Progressive condition (95% of the Progressive trials). However, in the Simple Past condition the participants did not show a strong preference for either picture choosing the Completed Picture in only 54% of the trials.

•A mixed effects logistic regression analysis showed the proportion of 'accurate' responses was significantly higher for the progressive than for the simple past.

•We also fit a mixed effects logistic regression to test whether the selection of the 'Target' picture was significantly above chance in the Simple past, the log-odds of an accurate response were not significantly higher than 0 (intercept $B = 0.26$, $SE = 0.3$, $Z = 0.86$, $p = 0.39$), which suggests at-chance performance in this condition.

Results: English (Online)

Analysis revealed a significant effect of aspectual condition in the time window from 500 to 3000 ms after the onset of the lexical verb (sum $z = -274.84, p < 0.01$, represented by shading in Fig. 4).



English Results: Eye Movements By Looks to Target

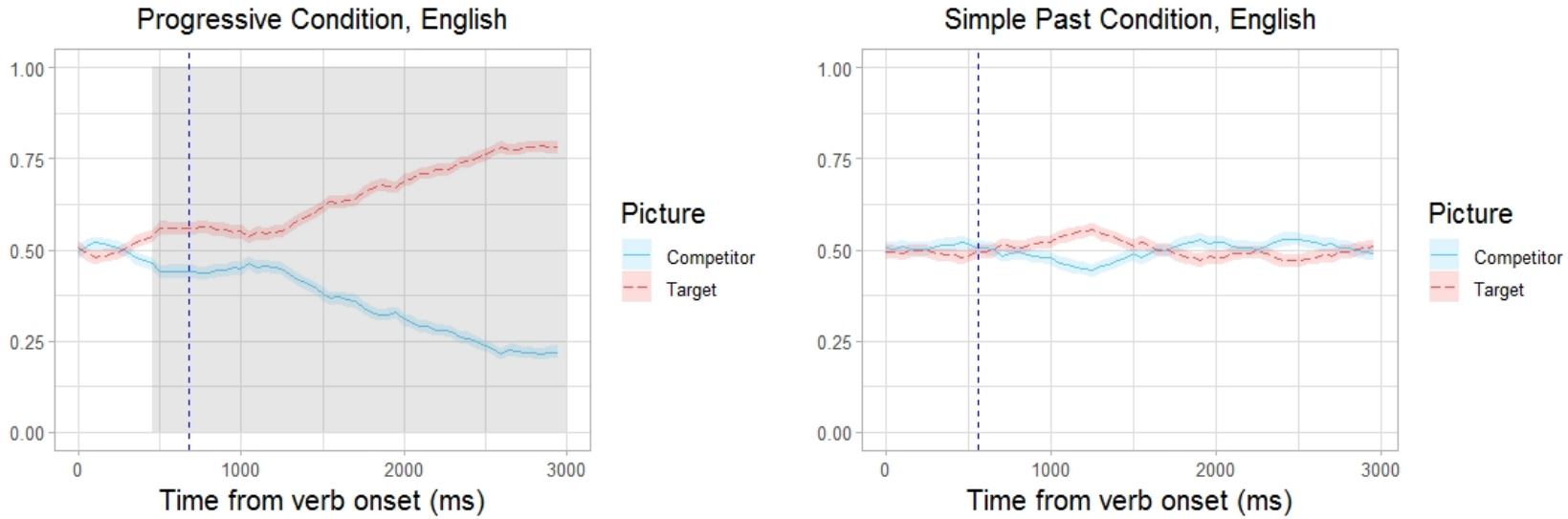


Figure: English experiment: Proportion of looks to the Target and Competitor pictures in the Past Progressive and Simple Past conditions. Shading represents the time window where the probability of looks to the Target picture was significantly above chance. The dashed vertical blue lines mark the average lexical verb offsets in the two conditions.

English Results: Eye Movements By Looks to Target

As in Experiment 1, we analyzed the proportion of looks to the Target picture separately for the two aspectual conditions: Simple Past and Past Progressive (Fig. 5). It revealed that in the Progressive condition the probability of looks at the Target picture was significantly above chance in the time window from 450 to 3000 ms after the verb onset ($z = 283.62, p < 0.01$, represented by shading in Fig. 5). The analysis of the Simple Past condition did not reveal any significant clusters of above-chance looks to the Target picture.

Discussion

- These results confirm our prediction that the imperfective forms in both languages draw attention to the in-progress representation of the event.
- With respect to the perfective forms, our results suggest that perfective accomplishment verbs in Russian strongly highlight the result state of the event.
- Our results for the English Simple Past condition are striking. They suggest that even on telic predicates, the Simple Past form does not encode a preferential cognitive salience for either the activity portion of an event *or* its result state.

PART III

New Analysis: Some Very Very Surprising Stuff

The Specialness of States in English

In English, we can find many grammatical/constructional linguistic phenomena that are sensitive to stativity.

- The present tense is possible on states to give ongoing interpretations of the eventuality description
- The progressive is ungrammatical on states
- Statives are interpreted via overlap in a narrative, contrasting with all dynamic eventualities, including atelics
- Only statives can get epistemic interpretations under *must*
- Only statives get a universal perfect interpretation under the *have* auxiliary
- Some matrix verbs select state descriptions in their complement position like *turn out*, *revealed*, *discovered*

The Progressive in English is Stative: Narrative Progression

From these diagnostics, it is possible to show that the progressive in English is actually stative (a derived state).
(First observed in Leech 1971)

(8) a. John arrived. He sat down. Then he left in a hurry.
b. John arrived. He drank coffee. Then he left in a hurry.
c. John arrived. He was sweating. Then he left in a hurry.
d. John arrived. He looked hot and bothered. Then he left in a hurry.

The Progressive in English is Stative: The Universal Perfect

(See Portner 2003)

(9) a. John has been in the park since 5 o'clock.

b. John has been jogging since 5 o'clock.

c. *John has driven a truck since 5 o'clock.

d. *John has broken the vase since 5 o'clock.

The Progressive in English is Stative: Selection

(Hallman 2009)

(10) a. The inspector revealed/discovered Max to be a liar.
b. The inspector revealed/discovered Max to be lying.
c. *The inspector revealed/discovered Max to lie.

The Progressive in English is Stative: Epistemic Readings

(Ramchand 2014)

(11) a. John must be in his office, the light is on. *epistemic*

b. John must be in his office or cleaning lady won't enter. *deontic*

However, if the verb combining with *must* is dynamic, only a deontic reading is possible.

(12) John must go to the party. *only deontic*

The progressive patterns with statives here, allowing the epistemic reading with *must*.

(13) John must be making his handout.

Prog as a Derived State

Claim: The English Progressive is not an aspect, but a derived aktionsart stative form built at the vP level in order to make the in progress state of a dynamic eventuality assertable in the present tense.

Why Should There be a Special Relationship between PRESENT and States?

(after Taylor 1977, see also Hallman 2009)

(I). **Temporal Properties of Simple Dynamic Events**:

A process event must have a temporal parameter longer than a moment. If a simple process is true at an interval I, then it is true at every subinterval of that interval larger than a moment.

(II). **Temporal Properties of States**:

A state can have a moment as its temporal parameter. If a state is true at an interval I, then it is true at every subinterval of that interval, including at each moment.

(III) **Temporal Properties of Complex Events**:

An event with complex subevental structure must have temporal run times corresponding to *each* of the subevents in that structure. If a complex event is true at an interval I, then we cannot guarantee that there is any subinterval of I at which the complex event is true.

Why Should There be a Special Relationship between PRESENT and States

Because English cares so deeply that only states can be expressed using the simple present, we hypothesize that:

> English Present tense denotes IDENTITY with the Anchor. The Anchor is t*, the speech time, which is conceptualized as *a moment*

Only states can be true at a moment. Only states form assertable constructions under these conditions.

The Irrelevance of States in the Russian System

(See Minor and Ramchand 2018 (ms, UiT. Presentation at FARL in Moscow).
We have not found a single linguistic construction in Russian that makes a division between stative on the one hand and dynamic on the other. *There are many temporal constructions however, that are sensitive to the telic/atelic distinction (based rather on event homogeneity)*:

- The 'present' ending in Russian is interpreted as ongoing for homogenous events, and future for nonhomogenous events
- Phase verbs like 'start' and 'begin' select only homogenous events
- Narrative overlap is possible for homogenous events, and event progression for non-homogenous events

So Why is Russian Different?

The fact that Russian does *not* show this sensitivity to states in the 'present', means that the relation to the speech time in the so called present tense under imperfective aspect is not IDENTITY but *overlap* (sometimes annotated as $\odot$) .

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1st Ingredient:

The relations under T are not just PRES and PAST, but belong to a more varied, possibly more abstract set, crucial among which is the difference between IDENTITY and OVERLAP in addition to the commonly assumed PRECEDES and FOLLOWS.

Why is Russian Different from English?

Another way in which Russian is different, deeply different from English is that it grammaticalizes the distinction between homogeneous and non-homogeneous eventualities and this feature [$\pm$ homogeneous] interacts with the morphosyntactic features of the system.
In particular, homogeneity, the feature which we assume with Tatevosov (2018) is specified low down in the event domain), is in a close relationship with the relation in T

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2nd Ingredient:

Languages can have quite different active morphosyntactic features, corresponding to a grammaticalization (or not) of a possible interpretive contrast

The Russian 'Present' is Bivalued

The Russian system actually *grammaticalizes the T relation differently* depending on the value of the homogeneity feature: (i) the 'present' tense morphology denotes $\odot$ with respect to the deictic anchor t* in the context of [+homogenous], and (ii) It denotes $>$ in the context of [−homogenous]

See also (Minor and Ramchand 2018).

The Anchor

The Standard toolbox assumes that the anchor is always t*, or at least the 'now' of an AUTHOR in embedded clauses. However, here I will assume that there are two different ways to get truth conditions asserting an eventuality in the past:
A. Deictic Anchor + PRECEDES T relation
B. Contextual/Discourse Anchor Interval (Past) + IDENTITY T relation.

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B. Contextual/Discourse Anchor Interval (Past) + IDENTITY T relation.
3rd Ingredient:
The Anchor can be a contextual/discourse motivated *actual* interval, i.e. its reference can be determined anaphorically in addition to indexically. In some languages, this is all past tense is—an anaphorically determined anchor instead of an indexical one)

Russian T relation in 'Past' and 'Present'

Russian Past

Anchor is a contextual past interval, T is $>$ (follows) in the context of [−homogenous].

Anchor is a contextual past interval, T is $\odot$ (overlap) in the context of [+homogenous]

Russian T relation in 'Past' and 'Present'

Russian Past
Anchor is a contextual past interval, T is $>$ (follows) in the context of [−homogenous].
Anchor is a contextual past interval, T is $\odot$ (overlap) in the context of [+homogenous]

Russian Past
Anchor is t*, T is $>$ (follows) in the context of [−homogenous].
Anchor is t*, T is $\odot$ (overlap) in the context of [+homogenous]

English T Relation in the 'Past' and 'Present'

English Past
Anchor is a contextual past interval, T is IDENT

English Present
Anchor is t*, T is IDENT

What Does Past Tense Marking Contribute in English?

The reason that the event run time is restricted to being in the past is due to the presuppositional content of the *-ed* participle ending in English, which under this story is *not actually tense at all!*

The contextual past interval updates in narrative progression by default for dynamics, and is constructed based on containment within the previous eventuality for states. But this is not grammaticalized in English, it is negotiated via the discourse.

Conclusion

Taking the State sensitivity of English seriously, gives rise to an analysis in which the T relation provided by English clauses is always *Ident*. The present tense is deictically anchored, while the past tense is anchored to a contextual extended previously actualized interval.

Russian on the other hand grammaticalizes two different types of temporal ordering based on the homogeneity of the lexical predicate. In the case of nonhomogenous predicates this is a discrete temporal sequencing with no overlap of the whole run time. Experimentally, this shows up in the immediate association of speakers of Russian with a post state when they hear the past perfective.

In English, the simple past merely provides a presupposition that the contextual anchor lies in the past, but says nothing about the fit between that anchor interval and the run time of the event.

Conclusion: Loci of Variation?

The simple typological dichotomy of Bohnemeyer and Swift (2004), while a useful initial crude description, is ultimately too simplistic. Under this view, there are loci of variation in each of the 'Zones' of the clause.

Anchor: Is it t*, or some other interval ? What does a language choose as the default and what can be negotiated contextually or linguistically by other means?

T Relation: Is it IDENT or $>$ or $<$ or $\odot$ or something even more specific? What does a language tend to choose as the default here, and what sorts of relations can be expressed by overt morphology?

Eventuality Description: What are the basic aktionsart types expressible in the language. Which lexical distinctions are grammaticalized and interact with the rest of the featural system of the language?

Selected References

•Bohnemeyer, J. and M. Swift. (2004). Event Realisation and Default Aspect. *Linguistics and Philosophy*. vol 27, pages 263296

•Klein, Wolfgang. 1995. A time-relational analysis of Russian aspect. Language 71: 669-695

•Minor, Mitrofanova and Ramchand. 2020. *Processing Grammatical Aspect in a Visual World Paradigm: English vs. Russian*. Poster presented at AmLaP 2020. Potsdam. https://prezi.com/view/fHiBMthvzLxVbWYT6I4P/

•Minor et al 2020. *The Fine-grained Time Course of Grammatical Aspect Processing*. (submitted. *Journal of Memory and Language*.)

•Minor, Sergey and Gillian Ramchand. 2019. Stativity vs. Homogeneity: Similarities and Differences between the English Progressive and the Russian Imperfective. ms. University of Tromsø

•Ramchand, Gillian. 2018. *Situations and Syntactic Structures*. MIT Press Monograph.

•Tatevosov, Sergey. 2018. On the Aspectual Architecture of Russian. ms., Moscow State University.

•Zhou, P., Crain, S., Zhan, L. (2014). Grammatical aspect and event recognition in childrens online sentence comprehension. *Cognition* , 133 (1), 262-276.