
Cross-linguistic variation in the perfect from the perspective of the PTS theory

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Goal of the perfect session

- ▶ Contrast theories of the perfect
 - ▶ Result State theory
 - ▶ Perfect Time Span theory (aka Extended Now theory)
- ▶ Related phenomena of interest:
 - ▶ interpretations of the perfect
 - ▶ interaction with aspects
 - ▶ interaction with tenses
 - ▶ interaction with adverbials
- ▶ Constraints on the theories:
 - ▶ compositionality
 - ▶ cross-linguistic variation

Goal of this talk

- ▶ Focus on cross-linguistic variation in the perfect wrt:
 - ▶ the availability of different perfect interpretations, which correlates with constraints on viewpoint aspect
 - ▶ the interaction with present and past positional adverbials e.g., *today, yesterday*
- ▶ Discuss how the cross-linguistic facts are accounted for on the PTS theory

Perfect Time Span (PTS) theory

- ▶ The perfect is a relative tense. It relates two time intervals
- ▶ First instantiation of the theory – the Extended Now (XN) (McCoard 1978, Dowty 1979)

I) $[[\text{PERFECT}]] = \lambda p_{\langle i, t \rangle} \lambda t_i \exists t'_i [\text{XN}(t', t) \ \& \ p(t')]$
where $\text{XN}(t', t)$ iff t is a final subinterval of t'

Perfect Time Span (PTS) theory

- ▶ The perfect introduces an interval – PTS – that extends back from, or precedes, the reference time determined by tense
- ▶ The time of the underlying event or state is situated relative to the PTS

2) Alicia has drunk the wine.

≈ The time of Alicia drinking the wine is during an interval that extends back from the speech time.

McCoard 1978, Dowty 1979, McCawley 1993, Vlach 1993, Iatridou, Anagnostopoulou and Izvorski 2001, Portner 2003, Pancheva and von Stechow 2004, Rothstein 2008, a.o.

Result State (RS) theory

- ▶ The perfect transforms event and state descriptions into descriptions of corresponding result states
- ▶ The result states are then located in time by tense

2) Alicia has drunk the wine.

≈ The result state of Alicia drinking the wine holds at the speech time.

Moens and Steedman 1988, Parsons 1990, Kamp & Reyle 1993, aspects of Vlach 1993
Giorgi & Pianesi 1998, Kamp, Reyle & Rossdetscher 2013, a.o.

Perfect Time Span (PTS) theory

- ▶ The PTS theory can further incorporate a pragmatic notion of current relevance

2) Alicia has drunk the wine.

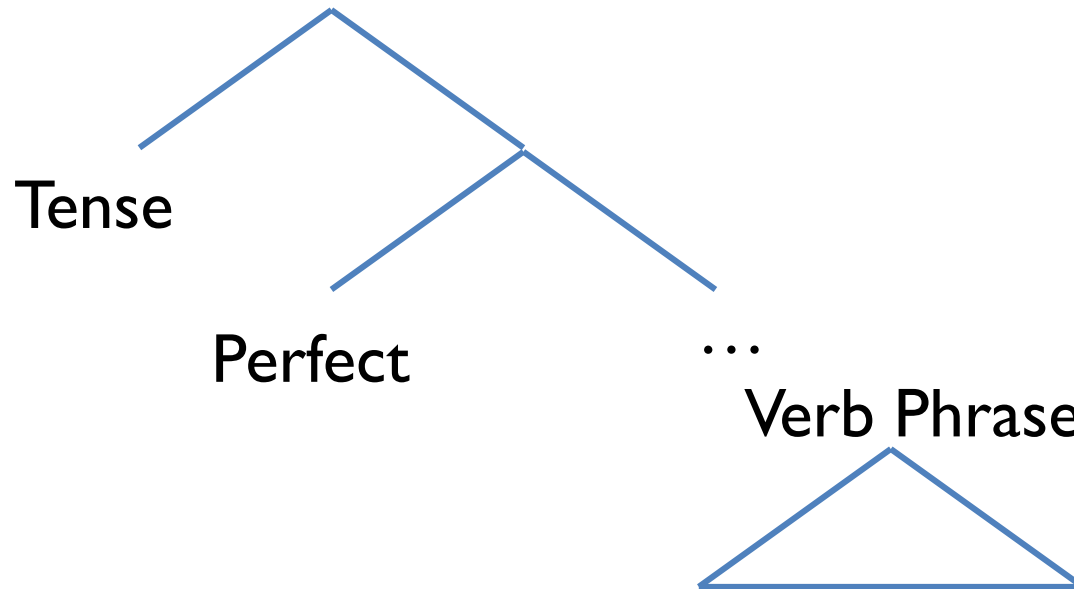
≈ The time of Alicia drinking the wine is during an interval that extends back from the speech time

presupposition: the effects (consequences/results) of her drinking the wine are currently relevant

Portner 2003, a.o.

Shared basic assumptions

▶ Clausal architecture



- ▶ The projection of the perfect is linked to a time t that is provided by tense.

RS vs. PTS Theory

- ▶ Compositional treatment with the shared assumptions:

3) PRESENT [PERFECT [Alicia drink the wine]]

a. $\exists t \exists s \exists e$ [e is an event of Alicia drinking the wine & s is a result state of e & $t \subseteq$ the time of s & $t =$ the speech time] (RS)

b. $\exists t' \exists t \exists e$ [e is an event of Alicia drinking the wine & the time of e $\subseteq t$ & $t \leq t'$ & $t' =$ the speech time] (PTS)

Two test cases

- ▶ Cross-linguistic variation in:
 - ▶ the interpretations available to perfects
 - ▶ temporal modification of perfects by adverbials like *today* and *yesterday*

Interpretations of the perfect

- ▶ Four types of perfects (McCawley 1971, Comrie 1976, a.o.)
 - ▶ Universal
 - ▶ Experiential
 - ▶ Resultative
 - ▶ Hot news

- 4) a. Since 2000, Alexandra has lived in LA.
b. Lola has seen “The Princess and the Warrior”.
c. Rebecca has lost her glasses (now).
d. The Red Sox have (just) won!

Questions

- ▶ Is there a common semantics for the perfect?
- ▶ If so, is the distinction in perfect readings grammatically based or due to pragmatic factors (interacting with event type)?

Some answers

- ▶ A uniform semantics for the perfect; the different interpretations are contextually determined (and also dependent on the underlying event type)

(e.g., McCoard 1978, Heny 1982, Inoue 1989, Hornstein 1990, Klein 1992, 1994, Musan 2001)

- ▶ Different perfect operators; there is no uniform overall representation for the perfect

(von Stechow 1999, 2002, a.o.)

PTS theory's answer

- ▶ Uniform semantics for the perfect; grammatical factors, such as the interpretation and/or scope of adverbs explain the ambiguity (Dowty 1979, Vlach 1993, a.o.)

- 5) Betsy has been in Boston for three months.
 - a. universal: ADV is a PTS modifier
 - b. experiential: ADV is an event-time modifier

- 6) Betsy has been in Boston since Monday.
 - a. universal: durative PTS-modifying ADV
 - b. experiential: inclusive PTS-modifying ADV

PTS theory's answer

- ▶ Uniform semantics for the perfect; at least some of the interpretations are due to different combinations of perfect with viewpoint aspects and aktionsarts (Iatridou et al 2001, Portner 2003, Pancheva 2003)

Perfect reading	Viewpoint aspect	Aktionsart	PTS-adverb
universal	unbounded	any	durative
experiential	unbounded	any	inclusive
experiential	bounded	any	inclusive
universal	bounded	atelic	durative

The role of aspect: English

▶ with states:

5) Betsy has been in Boston for three months.

a. universal: unbounded durative PTS-ADV

b. experiential: bounded inclusive covert PTS-ADV
(overt ADV is an event-time modifier)

The role of aspect: English

▶ with activities:

7) Betsy has worked since Monday.

a. ? universal: bounded durative PTS-ADV

b. experiential: bounded inclusive PTS-ADV

8) Betsy has worked for three hours now.

universal: bounded durative PTS-ADV

The role of aspect: English

▶ with telic events:

I 1) Betsy has written a letter since Monday.

- | | | | |
|------|---------------|---------|-------------------|
| a. * | universal: | bounded | durative/PTS-ADV |
| b. | experiential: | bounded | inclusive PTS-ADV |

I 2) Betsy has been writing a letter since Monday.

- | | | | |
|------|---------------|-----------|-------------------|
| a. | universal: | unbounded | durative PTS-ADV |
| b. ? | experiential: | unbounded | inclusive PTS-ADV |

The role of aspect cross-linguistically

- ▶ The effects of viewpoint aspect hold cross-linguistically:
 - ▶ Greek perfect participles are marked perfective
 - ▶ The universal perfect is severely restricted: it is only possible with certain atelic predicates
 - ▶ Bulgarian perfect participles can be perfective or imperfective
 - ▶ The universal perfect is available with imperfective participles, or with perfective participles combining with atelic predicates

The role of aspect: Greek

▶ Greek perfective atelics:

13) a. Eχi kivernisi apo to 1990 mexri tora.
has-3sg governed-**PF**-PERFECT from the 1990 until now
‘S/he has governed from 1990 to now.’
universal

b. Eχi kivernisi.
has-3sg governed-**PF**-PERFECT
‘S/he has governed.’
experiential

The role of aspect: Greek

- ▶ In Greek, perfective states become inchoative (this is independent of the perfect):

14) Ο Γιάννης έχει αγαπήσει την Μαρία.

the Jannis has-3sg loved-**PF**-PERFECT the Mary

‘John has fallen in love with Mary’

* universal

resultative

experiential

The role of aspect: Greek

- ▶ In sum, in Greek the interpretations of the perfect are constrained by the semantics of the perfective (bounded) viewpoint aspect

Perfect reading	Viewpoint aspect	Aktionsart
experiential	perfective	any, including coerced atelics
resultative	perfective	telic, including coerced atelics
universal	perfective	non-coerced atelics

The role of aspect: Bulgarian

- ▶ Bulgarian, with telic events:

15) a. Investiciite sa narast**v**ali ot 1997 nasam.

investments are grow-**2IMP**-PERFECT from 1997 t/s-now

‘Investments have been growing since 1997.’

universal

b. Investiciite sa narast**n**ali ot 1997 nasam.

investments are grow-**PF**-PERFECT from 1997 t/s-now

‘Investments have grown since 1997.’

resultative

The role of aspect: Bulgarian

- ▶ In Bulgarian, perfective states too become inchoative (this is independent of the perfect):

16) a. Marija vinagi e običala Ivan.

Maria always is love-IMP-PERFECT Ivan

‘Maria has always loved Ivan.’

universal

b. Marija (*vinagi) e obiknala Ivan.

Maria (*always) is love-PF-PERFECT Ivan

‘Maria has fallen in love with Ivan.’

resultative

The role of aspect: Bulgarian

- ▶ Bulgarian, with an activity ‘drink the wine’ (a-b):

17) a. Az sum pila vinoto.

I am drink-**PF**-PERFECT the-wine

‘I have drunk from the wine.’

experiential

b. Az sum pila vinoto ot 12 nasam.

I am drink-**PF**-PERFECT the-wine from 12 t/s-now

‘I have been drinking the wine since 12.’

universal

Cf. *piela* ‘drink-**IMP**-PERFECT’

The role of aspect: Bulgarian

- ▶ Bulgarian, with telic ‘drink the wine’ (c-d):

17) c. Az sum izpila vinoto.

I am prefix-drink-**PF**-PERFECT the-wine

‘I have drunk the wine.’

resultative

b. Az vinagi sum si izpivala vinoto.

I always am refl. prefix-drink-**2IMP**-PERFECT the-wine

‘I have always drunk my wine.’

universal

The role of aspect: Bulgarian

- ▶ In sum, in Bulgarian the perfect interpretations are determined by the semantics of the perfective (bounded) and imperfective (unbounded) viewpoint aspect

Perfect reading	Viewpoint aspect	Aktionsart
experiential	perfective	atelic
experiential	imperfective	any
resultative	perfective	telic, including coerced atelics
universal	imperfective	any
universal	perfective	non-coerced atelics

-
- ▶ 28 Note: sometimes the imperfective can only be used in an evidential perfect

The role of aspect: Saisiyat

- ▶ No universal perfect
- ▶ Inchoative interpretation of atelics

18) a. Ataw rae'oe' ila pinobaeh

Ataw drink PERFECT wine

'Ataw has drunk the wine (the wine is finished).'

b. Ataw balih ila

Ataw skinny PERFECT

'Ataw has become skinny.'

c. Ataw amata:waw ila

Ataw work PERFECT

'Ataw has started to work.' Guekguezian (in prog)

The role of aspect: Niuean

▶ No universal perfect

19) a. Kua oti lā ia e vahega
PERFECT finish just 3SG ABS class
'The class has just finished.'

b. Kua fano a Tom ki Hawaii
PERFECT go ABS Tom to Hawaii
tali mai he hau a ia ki Niu Silani
since DIRI at come ABS 3SG to New Zealand
'Tom has been to Hawaii since he moved to
New Zealand.'

Matthewson et al (2012)

The role of aspect: Niuean

▶ Inchoative interpretation of atelics

20) Kua iloilo tei e tama fifine haau
PERFECT intelligent PERFECT ABS child female your

‘Your daughter is now intelligent; she has become intelligent.’

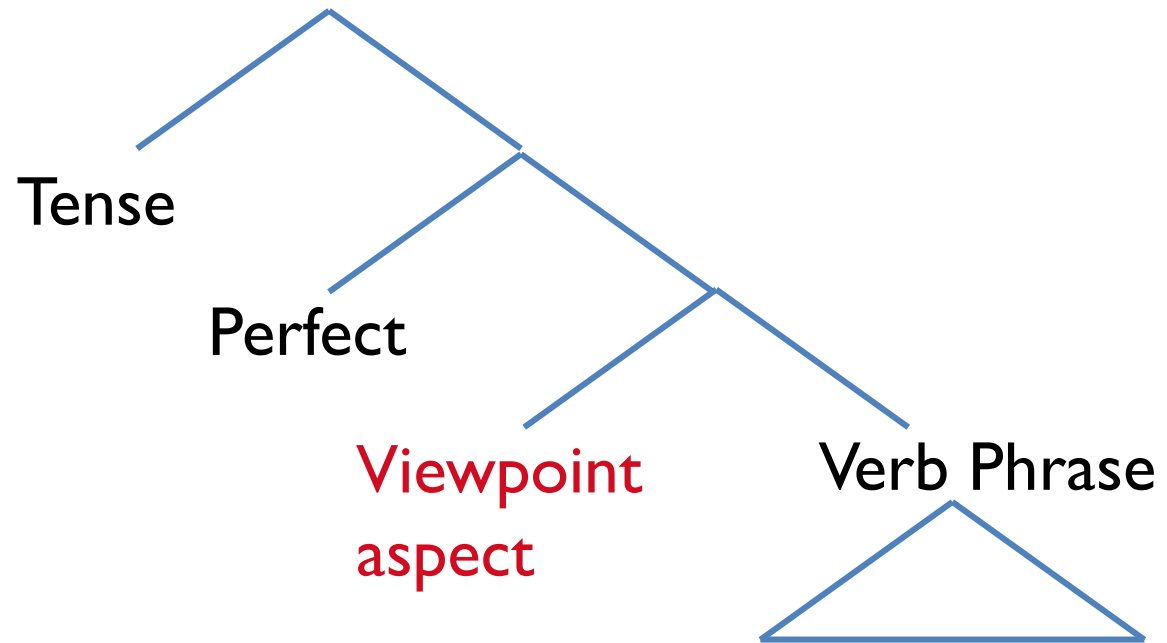
Matthewson et al (2012)

In sum: cross-linguistic variation

- ▶ The availability of the perfect interpretations correlates with
 - ▶ the viewpoint aspect allowed in the perfect &
 - ▶ with the viewpoint aspect – aktionsart combinations attested independently of the perfect
- ▶ Viewpoint aspect, playing its usual role, determines the interpretation of a perfect

A theory of temporality

- ▶ Viewpoint aspect is expressed *below* the perfect
- ▶ How does the perfect fit in a general theory of aspect and tense?



A theory of temporality

- ▶ The two-tiered theory of aspect (Smith 1991, Klein 1994, a.o.)
 - ▶ aktionsart
 - ▶ viewpoint aspect

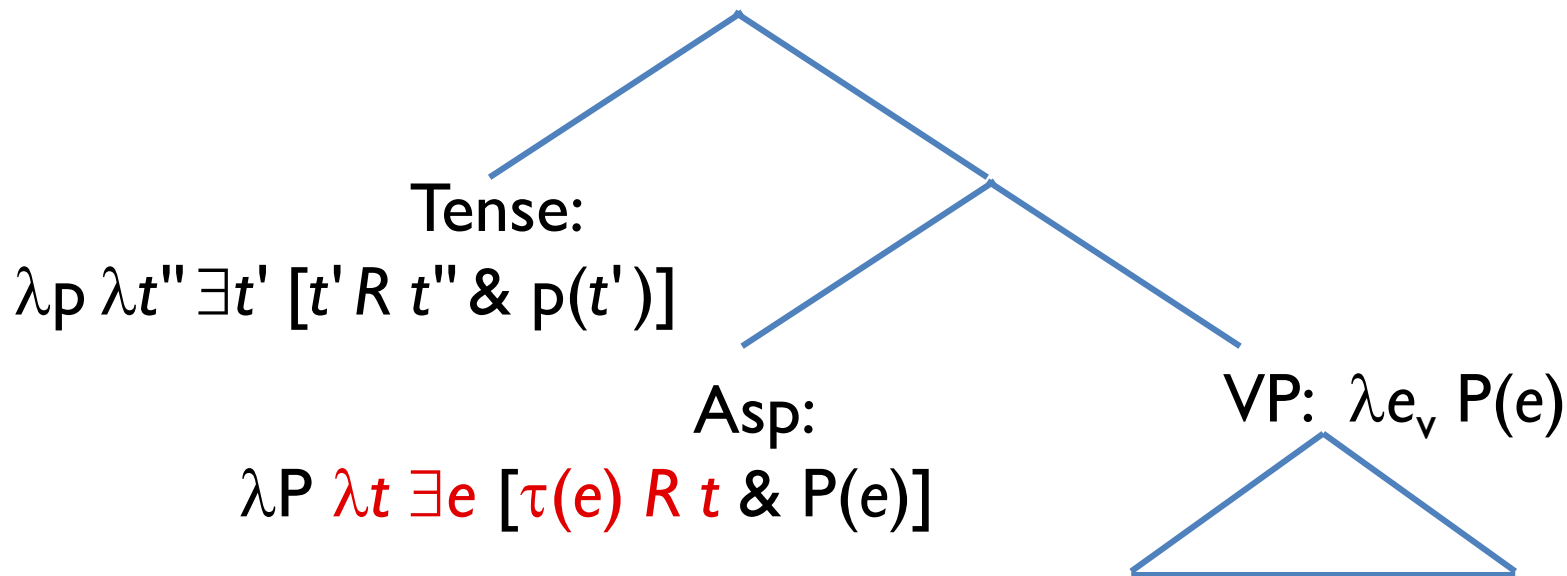
21) a. $[[VP]] = \lambda e_v P(e)$

b. $[[ASP]] = \lambda P_{\langle v,t \rangle} \lambda t_i \exists e_v [\tau(e) R t \ \& \ P(e)]$

22) $[[TENSE]] = \lambda p_{\langle i,t \rangle} \lambda t_i \exists t'_i [t' R t \ \& \ p(t')]$

A theory of temporality

- ▶ Compositional treatment of non-perfects:



PTS theory & viewpoint aspect

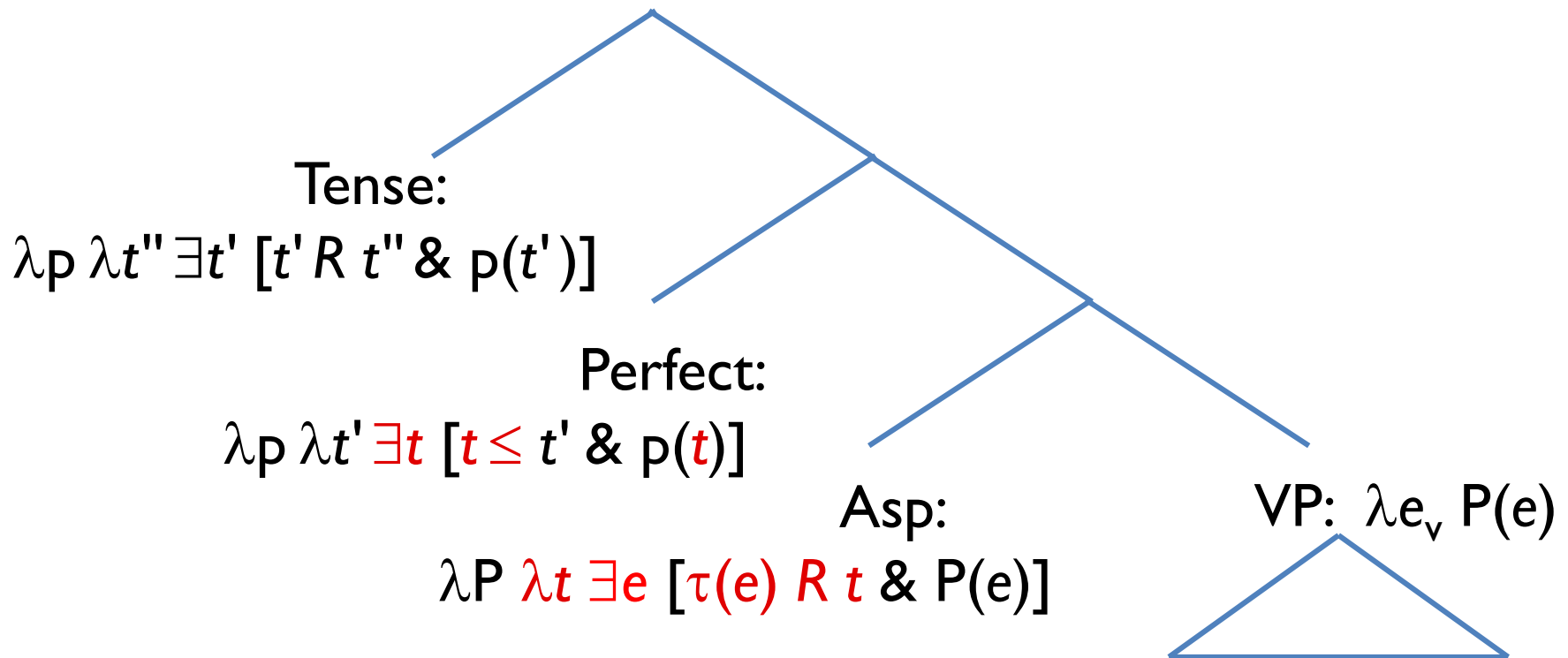
- ▶ On the PTS theory, the perfect is a relative tense:

$$23) \llbracket \text{PERFECT} \rrbracket = \lambda p_{\langle i, t \rangle} \lambda t_i \exists t'_i [t' \leq t \ \& \ p(t')]$$

- ▶ On that theory, we would expect viewpoint aspect to come *below* the perfect, as is the case.
- ▶ Viewpoint aspect plays its usual role - it situates the time of the eventuality relative to the PTS
- ▶ Tense also plays its usual role – it situates the PTS relative to the reference time

PTS theory & viewpoint aspect

► Compositional treatment

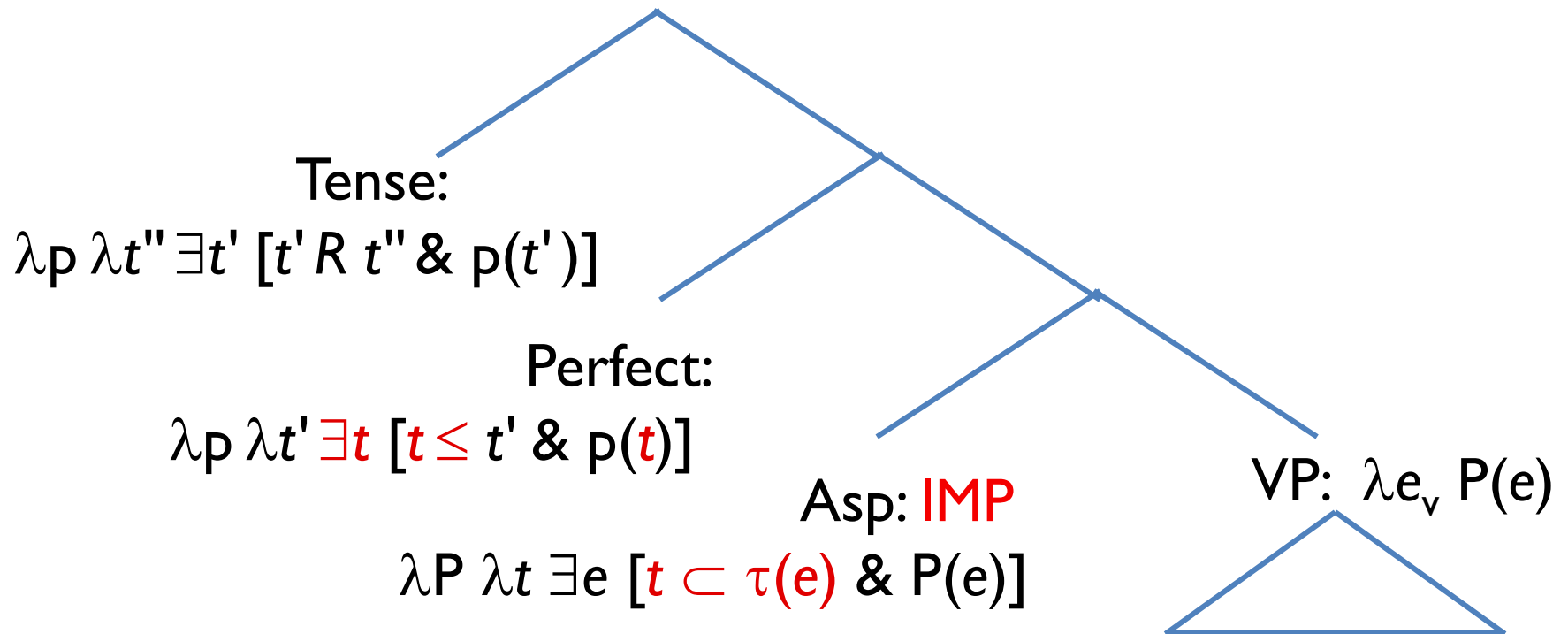


PTS theory & viewpoint aspect

- ▶ The PTS theory fits naturally with the two-tiered theory of aspect, and the larger theory of temporality in which that theory of aspect is embedded.
- ▶ No further provisions are needed

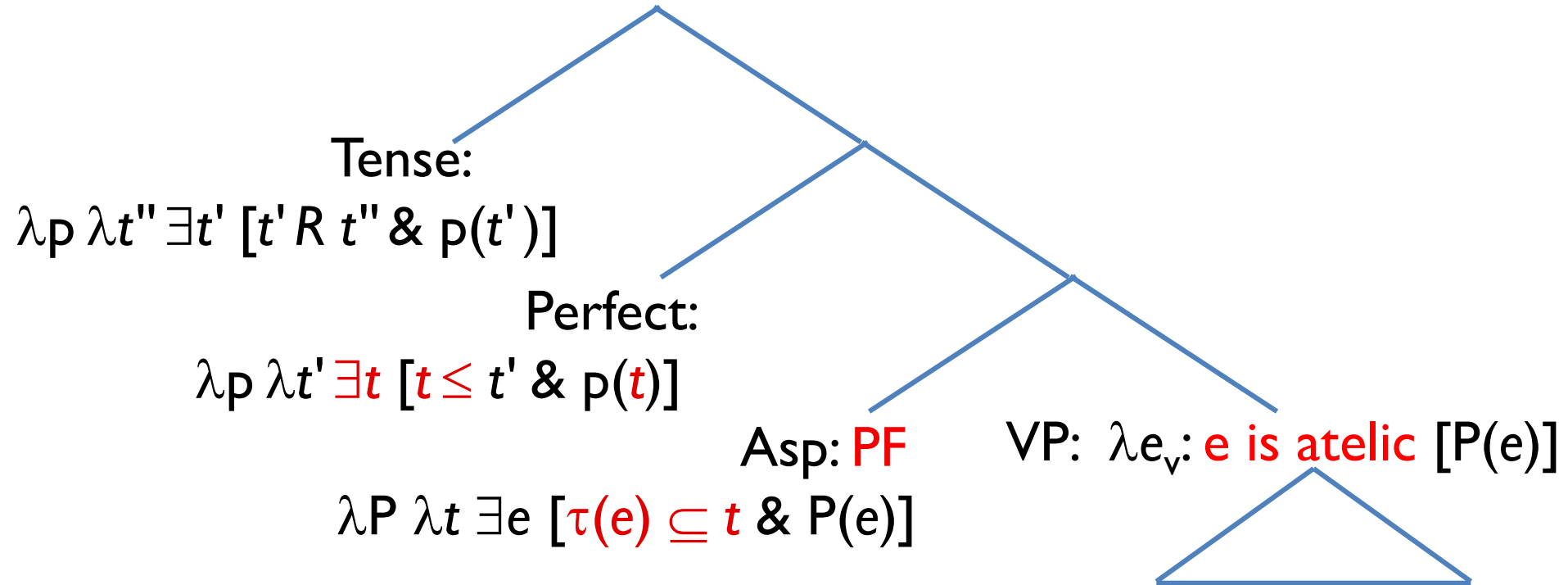
PTS theory & viewpoint aspect

- ▶ Universal perfect
 - ▶ Imperfective viewpoint



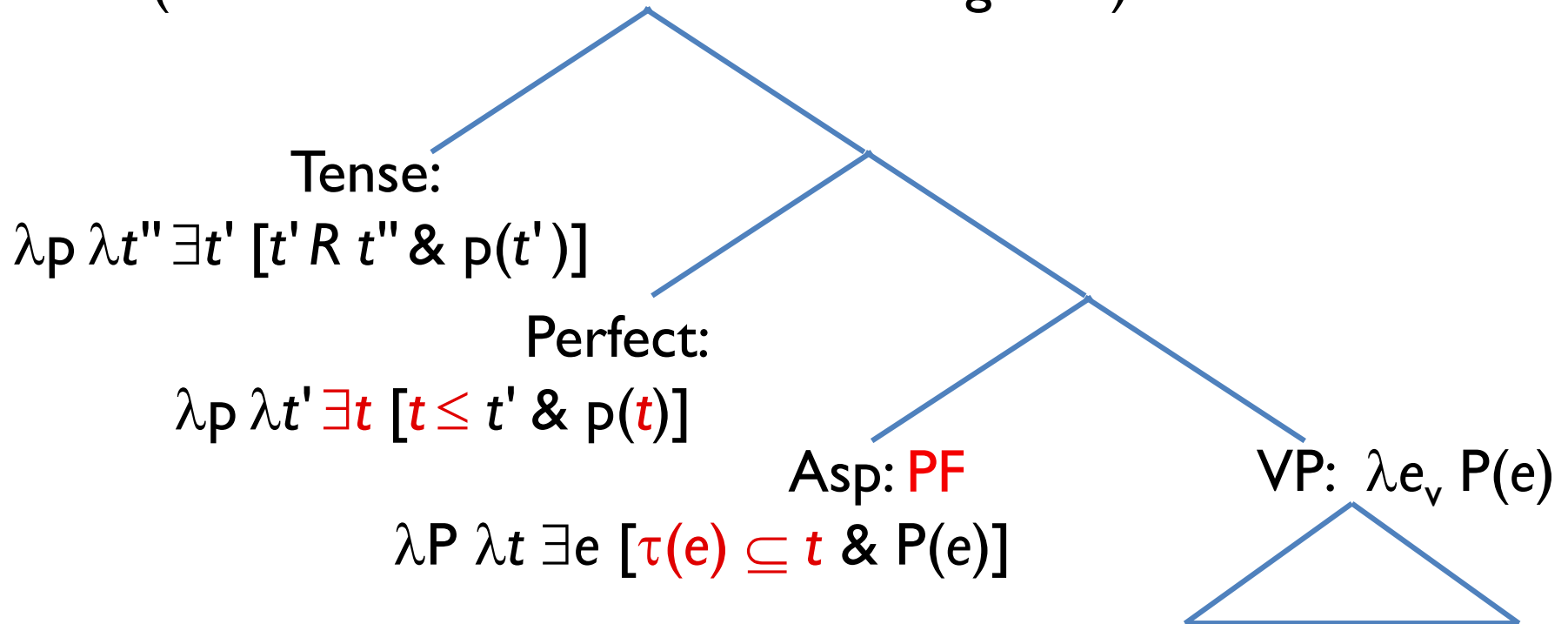
PTS theory & viewpoint aspect

- ▶ Universal perfect
 - ▶ perfective viewpoint, atelic VP



PTS theory & viewpoint aspect

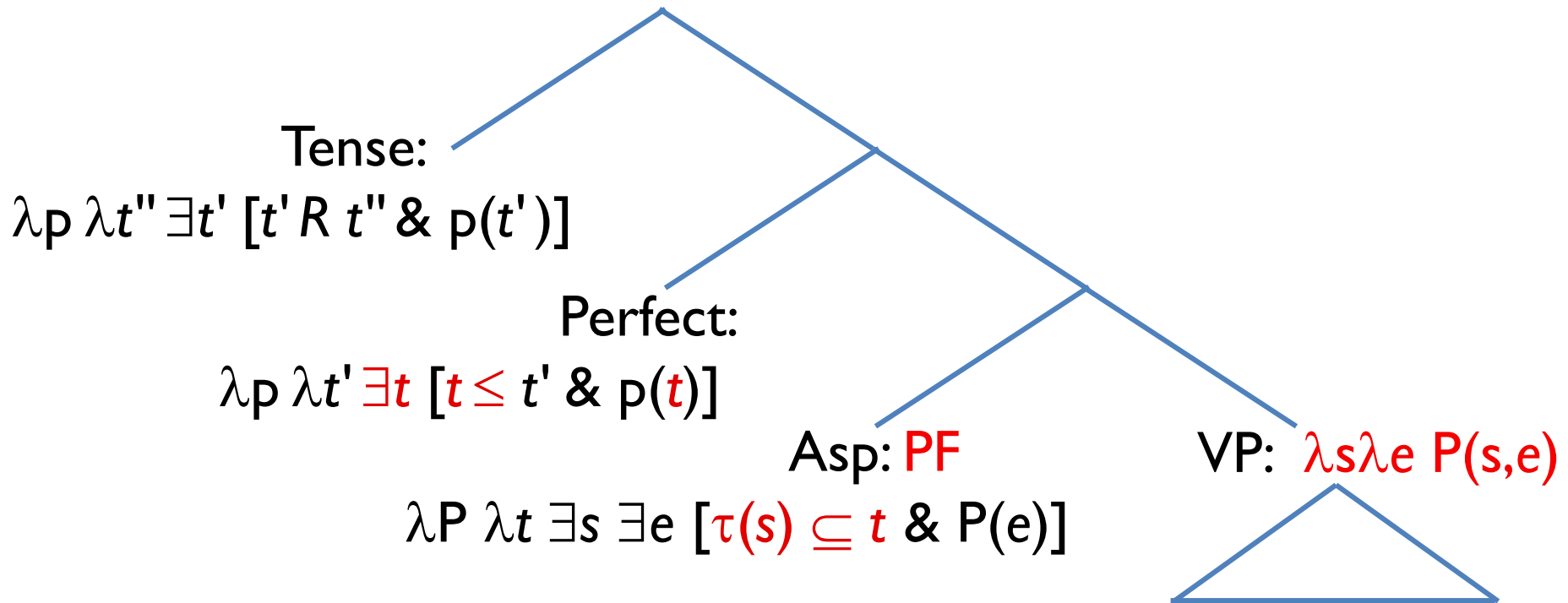
- ▶ Experiential perfect
 - ▶ perfective viewpoint
 - ▶ (more needs to be said about Bulgarian)



PTS theory & viewpoint aspect

▶ Resultative perfect

- ▶ a variety of perfective viewpoint, telic VP
- ▶ the PTS is the time of the target state (Kratzer 1998)



PTS theory & viewpoint aspect

- ▶ Hot News perfect
 - ▶ the PTS has very short duration

Anteriority theory & viewpoint aspect

- ▶ Some non-RS, non-PTS accounts (anteriority theory) treat the perfect as a viewpoint aspect (Hornstein 1990, Klein 1992, 1994, von Stechow 1999, Paslawska and von Stechow 2003, a.o.)

$$24) \llbracket \text{PERFECT} \rrbracket = \lambda P_{\langle v, t \rangle} \lambda t_i \exists e_v [\tau(e) < t \ \& \ p(t')]$$

- ▶ On those accounts, we would expect viewpoint aspects to be in complementary distribution with the perfect

RS theory & viewpoint aspect

- ▶ On the traditional RS theory, the projection of the perfect is a derived aktionsart:

25) $[[\text{PERFECT}]] = \lambda s_v \exists e_v [s \text{ is a result state of } e \ \& \ P(e)]$

- ▶ On that theory, we would expect viewpoint aspect to merge *above* the projection of the perfect – *if we assumed the two-tiered theory of aspect, i.e. that viewpoint aspects relate eventualities and times*

RS theory & viewpoint aspect

- ▶ On the traditional RS theory, any aspectual operators below the perfect have to be treated as operators from aktionsarts to aktionsarts
- ▶ Progressive aspect turns an event description into a description of the corresponding ‘progressive state’ (Parsons 1990, Kamp, Reyle & Rossdeutscher 2013)
- ▶ Default aspect is a vacuous operator that passes up an unaltered semantics of an eventuality description (Kamp, Reyle & Rossdeutscher 2013)

RS theory & viewpoint aspect

- ▶ The hierarchy of perfect and viewpoint can still be accounted for:
 - ▶ progressive over perfect can be ruled out by the requirement that progressive not combine with states.
 - ▶ the default aspect (any other aspects) could be further defined as combining only with lexical aktionsarts, not derived ones

RS theory & viewpoint aspect

- ▶ The RS theory needs to address the question of how viewpoint aspects below the perfect interact with time, in the presence of the perfect
- ▶ A recent RS account (Kamp, Reyle & Rossdeutscher 2013) incorporates temporal features into the lexical entry of verbs

Intermediate conclusions

- ▶ The account of the perfect interpretations is one of the successes of the PTS theory
- ▶ It identified a crucial role for viewpoint aspect
- ▶ It opens up the possibility for other, yet undescribed, perfect interpretations, depending on unusual properties of viewpoint aspects in different languages
- ▶ Since it treats the perfect as a relative tense, the PTS theory could naturally incorporate the two-tiered theory of viewpoint aspect

Interaction with positional adverbials

▶ The present perfect puzzle

(Comrie 1976, McCoard 1978, Klein 1992, a.o.)

- 26) a. *Alicia has danced on Monday / yesterday / at 10 o'clock.
- b. Alicia will have danced on Monday / at 10 o'clock.
- c. Alicia had danced on Monday / yesterday / at 10 o'clock.
- d. Alicia must have danced on Monday / yesterday / at 10 o'clock

Interaction with p-adverbials

- ▶ Cross-linguistic variation in the effect of combination of the present perfect with past positional adverbials

(Klein 1992, Musan 2001, Giorgi and Pianesi 1998, a.o.)

27) Hans ist gestern um zehn weggegangen.

Hans is yesterday at 10 left

Lit. 'Hans has left yesterday at 10.'

28) Gianni è partito alle quattro.

Gianni is left at 4

Lit. 'Gianni has left at 4'

Interaction with p-adverbials

- ▶ The combination of the present perfect with past positional adverbials has proved challenging.
 - ▶ the adverbials have been claimed to not be able to modify the event time but only the reference time (Reichenbach 1947)
 - ▶ problem: ambiguities
- 29) Alicia had left yesterday / at 10
- a. she left yesterday / at 10
 - b. she left before yesterday / 10

Interaction with p-adverbials

- ▶ The combination of the present perfect with past positional adverbials has proved challenging.
- ▶ P(osition)-definiteness constraint (Klein 1992)
 - ▶ The expression of the reference time and the of the event time cannot both be independently p-definite.
 - ▶ The English present is p-definite, the German present is not

Interaction with p-adverbials

- ▶ The combination of the present perfect with past positional adverbials has proved challenging.
- ▶ Result-state definiteness constraint (Giorgi and Pianesi 1998)
 - ▶ Adverbials fix the left boundary of the result state – the event time. Tense fixes the right boundary.
 - ▶ A result state cannot be definite. A result state is definite, whenever both its boundaries are definite.
 - ▶ English present tense fixes the right boundary to the speech time, the German/Italian one doesn't.

PTS theory & past p-adverbials

- ▶ The PTS theory attributes the present perfect puzzle to the fact that the PTS in the English present perfect includes the speech time.
- ▶ A present PTS cannot be modified by past adverbials

McCoard 1978, Dowty 1979, Pancheva and von Stechow 2004, Rothstein 2008

PTS theory & past p-adverbials

- ▶ A weak, cross-linguistically uniform lexical semantics for the perfect:
 - ▶ no part of the PTS can be after the reference time
 - ▶ the PTS can be before the reference time or it can include it as a final subinterval

30) $[[\text{PERFECT}]] = \lambda p_{\langle i, t \rangle} \lambda t_i \exists t'_i [t' \leq t \ \& \ p(t')]$
 $t' \leq t$ iff there is no $t'' \subset t'$ s.t. $t'' > t$

Pancheva and von Stechow 2004

PTS theory & past p-adverbials

- ▶ In English, the weak compositional meaning of the present perfect is strengthened under competition with the past

$$31) \quad [[\text{PRESENT}]] = \lambda p_{\langle i, t \rangle} \lambda t_i \exists t'_i [t' = t \ \& \ p(t')]$$

$$\begin{aligned} 32) \quad [[\text{PRESENT} \circ \text{PERFECT}]] &= \lambda p_{\langle i, t \rangle} \text{PRESENT} (\text{PERFECT}(p)) = \\ &= \lambda p \exists t' [t' = \text{now} \ \& \ \exists t [t \leq t' \ \& \ p(t)]] = \\ &= \lambda p \exists t [t \leq \text{now} \ \& \ p(t)] \end{aligned}$$

$$\begin{aligned} 33) \quad [[\text{PAST}]] &= \lambda p_{\langle i, t \rangle} \lambda t_i \exists t'_i [t' < t \ \& \ p(t')] = \\ &= \lambda p \exists t [t < \text{now} \ \& \ p(t)] \end{aligned}$$

PTS theory & past p-adverbials

- ▶ A (strengthened) present PTS cannot be modified by past p-adverbials

34) $[[\text{yesterday}]] = \lambda p_{\langle i, t \rangle} \lambda t_i [t \subseteq \text{yesterday} \ \& \ p(t)]$

35) a. $[\text{PRESENT} [\text{yesterday} [\text{PERFECT} [\text{PF} [\text{VP}]]]]]$

$\exists t [t = \text{now} \ \& \ t \subseteq \text{yesterday} \ \dots]$

b. $[\text{PRESENT} [\text{PERFECT} [\text{yesterday} [\text{PF} [\text{VP}]]]]]$

$\exists t [t = \text{now} \ \& \ \exists t' [t' \text{ extends back from } t \ \& \ t' \subseteq \text{yesterday} \ \dots]]$

Pancheva and von Stechow 2004

PTS theory & past p-adverbials

- ▶ In German, the semantics of the present is such that the past and the present perfect do not compete, so the meaning of the present perfect is not strengthened.

$$36) \quad [[\text{PRESENT}]] = \lambda p_{\langle i, t \rangle} \lambda t_i \exists t'_i [t' \geq t \ \& \ p(t')]$$

$$37) \quad [[\text{PRESENT} \circ \text{PERFECT}]] = \lambda p_{\langle i, t \rangle} \text{PRESENT} (\text{PERF}(p)) = \\ = \lambda p \exists t' [t' \geq \text{now} \ \& \ \exists t [t \leq t' \ \& \ p(t)]]$$

PTS theory & past p-adverbials

- ▶ The failure of strengthening of the meaning of the German perfect can also be detected in the universal perfect

38) I have always lived here (*... until recently).

39) Ich habe hier immer gewohnt ... bis vor kurzem
I have here always lived until recently
'I have always lived here ... until recently.'

Pancheva and von Stechow 2004

PTS theory & past p-adverbials

- ▶ The German semantics of the present is based on examples like:

40) Fritz ist in 10 Tagen krank.

Fritz is in 10 days sick

‘Fritz will be sick in 10 days.’

41) # Fritz is sick in 10 days.

Giorgi and Pianesi 1998, Musan 2001, Pancheva and von Stechow 2004

PTS theory & past p-adverbials

- ▶ The German semantics of the present is seen also in the present perfect:

42) Morgen hat die Konferenz bereits geendet.

tomorrow has the conference already ended

‘The conference will have ended by tomorrow.’

Rothstein 2008

PTS theory & past p-adverbials

- ▶ A syntactic constraint on the composition of PRESENT ° PERF :
 - ▶ Tense has to be finite
 - ▶ no coordination preventing the composition

- 43) How has he been occupying himself this week?
 - a. Well, he's played golf on Tuesday, ridden horseback on Wednesday, and rested on Thursday.
 - b. *Well, he has played golf on Tuesday, has ridden horseback on Wednesday, and has rested on Thursday.

Pancheva and von Stechow 2004, examples from McCoard 1978

PTS theory & past p-adverbials

- ▶ Yet, the account likely cannot be maintained as is:
 - ▶ Swedish, Danish and Norwegian have a present tense like German (Pancheva and von Stechow)
 - ▶ Yet Swedish at least has been argued to be like English with respect to the present perfect puzzle (Giorgi and Pianesi 1998, Rothstein 2008)

PTS theory & past p-adverbials

- ▶ Danish (though different judgments for the perfect are reported in Giorgi and Pianesi 1998)

44) John bliver syg i løbet af de næste par dage.

John becomes sick in -run of the next couple days

‘John will become sick in the next few days.’

45) John er ankommet igaar / klokken fem / in mandags

John is arrived yesterday clock five in Monday’s

‘John has arrived yesterday/at 5/on Monday.’

Pancheva and von Stechow 2004

PTS theory & past p-adverbials

▶ Swedish

- ▶ Present perfect claimed to be incompatible with past p-adverbials (Giorgi and Pianesi 1998, Rothstein 2008)
- ▶ Yet different judgments are also reported (Dahl 1985, Lindstrom and Wide 2001)

46) * Johan har slutat klockan fyra.

Johan has finished clock four

‘Johan has finished at four.’

PTS theory & past p-adverbials

▶ Swedish

- ▶ is like English, and unlike German, in requiring the PTS to include the present reference time (Rothstein 2008)

47) * Jag har alltid bott i Berlin

I have always lived in Berlin

men alldeles nyss har jag lyttat till Tübingen

but recently have I moved to Tübingen

‘I have always lived in Berlin but recently I moved to Tübingen’

PTS theory & past p-adverbials

- ▶ Where does this leave us?
 - ▶ maintain the weak PTS semantics for the perfect ($\text{PTS} \leq \text{reference time}$)
 - ▶ strengthening in the English present perfect
 - ▶ no strengthening in the German present perfect
 - ▶ strengthening in the Swedish present perfect (for yet unknown reasons)
 - ▶ the alternative is to posit special meanings for the present perfect cross-linguistically (Rothstein 2008)
 - ▶ $\text{PTS} \leq \text{reference time}$ in German
 - ▶ PTS extending back from present reference time in Swedish and English

PTS theory & past p-adverbials

- ▶ To conclude, the ingredients of the PTS approach to the present perfect puzzle are:
 - ▶ cross-linguistic variation in the location of the PTS relative to the present reference time
 - ▶ modification of PTS by p-adverbials
- ▶ Both ingredients are part of the essential semantics of the perfect – a relation between PTS and the reference time

Interaction with positional adverbials

- ▶ Interaction with present positional adverbials
(Kamp, Reyle & Rossdeutscher 2013, a.o.)
- ▶ Both the PTS theory and the traditional RS theory predict that the event time could be before today

48) a. Today Fritz has submitted his paper

b. Heute hat Fritz seine Arbeit eingereicht.

today has Fritz his paper submitted

‘Today Fritz has submitted his paper’

PTS theory & present p-adverbials

- ▶ On the PTS theory, adverbials can modify the reference time or the PTS

48) Today Fritz has submitted his paper

a. [PRESENT [today [PERFECT [PF [VP]]]]]

$\exists t$ [$t = \text{now}$ & $t \subseteq \text{today}$ & $\exists t'$ [t' extends back from t & $\exists e$ [$\tau(e) \subseteq t'$ & submit (Fritz, the paper, e)]]]

b. [PRESENT [PERFECT [today [PF [VP]]]]]

$\exists t$ [$t = \text{now}$ & $\exists t'$ [t' extends back from t & $t' \subseteq \text{today}$ & $\exists e$ [$\tau(e) \subseteq t'$ & submit (Fritz, the paper, e)]]]

PTS theory & present p-adverbials

- ▶ I have found that in English it is possible for *today* to modify the reference time, with suitable context
- ▶ In German, it continues to be very difficult to get that reading

49) Last time I hadn't submitted all the necessary documents before coming to your office, but *today* I have submitted them.

50) Today I have been in LA for a month

PTS theory & present p-adverbials

- ▶ A possible direction for analysis:
 - ▶ A strong tendency for *today, this morning* (used before noon) to be used as past (or future) adverbials, e.g. *earlier today, earlier this morning*
 - ▶ Reports that some English speakers do not accept *today this morning* with the perfect at all (Giorgi and Pianesi 1998), i.e., they treat them as past adverbials

51) Today John submitted the homework

PTS theory & present p-adverbials

- ▶ In fact, *today, this morning* seem to be used as speech-time adverbials only with states

52) a. Today I am writing a paper (only a planned event)

b. Today I am sleeping

53) Today I am sick

PTS theory & present p-adverbials

- ▶ A possible direction for analysis:
 - ▶ As a past adverbial *today* can modify the PTS
 - ▶ in German, since the PTS can be before the present reference time
 - ▶ but not in English, since the PTS has to include the reference time as a final subinterval
 - ▶ As a present adverbial, *today* combines with states; on the PTS theory the resultative and the universal perfects have the PTS being contained in a state
 - ▶ in English the PTS ‘extends’ the state to the reference time
 - ▶ In German it doesn’t necessarily

Conclusions: perfect readings

- ▶ On the PTS theory we can make two claims:
(Iatridou et al 2001, Pancheva 2003)
 - ▶ The different interpretations associated with the perfect in English and other languages are a consequence of the viewpoint aspect specification underneath the perfect
 - ▶ Cross-linguistic variation in the interpretations available to the perfect can be explained by selectional restrictions between the perfect and viewpoint aspect

Conclusions: perfect readings

- ▶ The PTS theory – given that it treats the perfect as a relative tense – needs no further amendments to handle the variation in perfect readings; it naturally fits in with the two-tiered theory of aspect, and a more general theory of temporality

Conclusions: P-adverbials

- ▶ The PTS theory accounts for adverbial modification through two factors:
 - ▶ the location of the PTS relative to the reference time
 - ▶ whether adverbials modify the reference time or the PTS
- ▶ Both factors are intrinsic to the core semantics of the perfect – relating PTS to the reference time
- ▶ However, there are still unsolved issues with both *yesterday* and *today*

Thank you!