The Perfect ‘Boundedness Bias’
as Syntactic Feature Licensing

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Overview of Talk

• The perfect combines with different lower aspects to generate different readings (Iatridou et al 2001)
• However, the perfect is ‘biased’ toward **bounded** aspect (**perfective, telic**) and against **unbounded** aspect (**imperfective, atelic**)
• “**Boundedness bias**” = licensing of [bounded] feature
• [+bounded] perfect does not license [-bounded] aspect
  • [-bounded] aspect: either prohibited, or needs overt marking
Characteristics and Uses of the Perfect

• The perfect has a constellation of related characteristics
  • *Anteriority*
  • *Present Relevance*
  • *Result State (of event)*

• The perfect has several uses involving these characteristics (McCawley 1971, Comrie 1976)
  • *Resultative* or stative: *result state* of *past* event holds *at present*
    • “I have lost my glasses!”
Characteristics and Uses of the Perfect

• **Existential** or experiential: subject holds present experience of past event
  • “I have eaten a century egg”

• **Universal** or persistent situation: event starting in past persists to present
  • “I have been studying at USC since 2011”

• **Recent past** or ‘hot news’: recently completed event has present relevance
  • “Elvis has left the building!”
Perfect Time Span

- Perfect Time Span (PTS) theory (Iatridou et al 2001): combining PTS with Viewpoint aspects yields distinct uses
- PTS: right boundary (RB) = reference time ($t_{\text{Ref}}$); left boundary (LB) set by adverbial (e.g., “since 2011”) or context
  \[
  \text{PTS: } LB \quad \text{________________________} \quad \text{RB} = t_{\text{Ref}}
  \]
- Version of Extended Now (McCoard 1978): present relevance ($RB = t_{\text{Ref}}$) + anteriority (extends left = before $t_{\text{Ref}}$)
  - Result state requires extra mechanism (Pancheva 2003)
PTS + Aspect: U-Perfect

• Viewpoint aspect (Smith 1991) relates situation time to PTS
• Imperfective: situation time includes PTS = event persists from LB through RB ($t_{Ref}$) = Universal (U-)Perfect
  • “I have been studying at USC since 2011”
    PTS: 2011 $t_{Ref}$ = Present
    Event: studying
PTS + Aspect: E-Perfect

- Perfective: situation time is included in PTS = event occurs before RB ($t_{\text{Ref}}$) = **Existential (E-)Perfect**
  - “I have eaten a century egg”
    - PTS: ______________________ $t_{\text{Ref}}$ = Present
    - Event: (eating) ______

"I have eaten a century egg"
PTS + Aspect: R-Perfect

• **Resultative (R-)Perfect** = resultative Viewpoint (Pancheva 2003) + telic Situation (telos of event = in PTS; target state extends to $t_{\text{Ref}}$)
  • “I have lost my glasses”
    PTS: __________________________ t_{\text{Ref}} = Present
    Event: losing • being lost

• Resultative Viewpoint seemingly unattested without Perfect

• Compare **Result State** theory (e.g., Parsons 1990)
  • Easily accounts for R-Perfect
  • Difficulty with U-Perfect (“have been studying” = no **result state**)
Boundedness Bias

• PTS theory incorrectly predicts PTS should combine equally well with all viewpoint aspects

• “Boundedness Bias”: U-Perfects (Imperfective = unbounded) less common than E-Perfects (Perfective = bounded) or R-Perfects (Resultative + Telic = bounded)

• “... there are some languages ... where the perfect is restricted to perfective aspect, while there are apparently none where the perfect is restricted to imperfective aspect” (Comrie 1976: 63)
Boundedness Bias: U-Perfect

• Many languages do not have a U-Perfect
  • Niuean (below), (Modern) Greek
    *Kua gagao agaia a Tom tali mai ia Tesema
    PERF sick still ABS Tom since DIR1 ABS December
    ‘Tom has been sick since December.’ (Matthewson 2013)

• No language has a U-Perfect but no E- or R-Perfect (cf. Brugger 1998 for Portuguese)
Boundedness Bias: U-Perfect

- E- or R-Perfect = ‘default’ perfect reading in many languages
- U-Perfect needs overt marking
  - English: U-Perfect requires overt progressive morphology or a durative adverbial (even though imperfective can be unmarked)
    - Unmarked: “he has danced” – ✓ E-Perfect # U-Perfect
    - Progressive (Marked): “he has been dancing” – ✓ U-Perfect
    - Durative Adverbial: “he has danced since 6 o’clock” – ✓ U-Perfect
- In fact, Iatridou et al (2001) claim that U-Perfects are impossible without such overt marking
Boundedness Bias: Telic Shift

• **Telic** situation aspect required by perfect in some languages (in addition to R-Perfектs)
  - Compare similar effect of perfective Viewpoint

• Perfect can shift **stative** predicates to **inchoatives**
  - Saisiyat (below), Niuean
    - Ataw ‘ayaeh ila
    - Ataw sick PERF
    - ‘Ataw has fallen sick.’

(Guekguezian 2014)
Boundedness Bias: Telic Shift

• Perfect can shift otherwise **atelic** predicates to **telic**
  • Saisiyat (below)

  Ataw  r<om>ae’oe: ila ka pinobaeh.  #Okay il-‘amet-i:
  Ataw  <AF>drink  PERF  KA  wine  not  drink-finish-DEP
  ‘Ataw has drunk up the wine. #It is not finished.’  (Guekguezian 2014)

  • Cf. perfective: no completive reading (‘drink the wine’ = **atelic**)

  Ataw  ina  r<om>ae’oe: ka pinobaeh.  Okay il-‘amet-i:
  Ataw  PFV  <AF>drink  KA  wine  not  drink-finish-DEP
  ‘Ataw drank the wine. It is not finished.’  (Guekguezian 2014)
Boundedness Bias

• Perfect shows bias toward **bounded** aspects (perfective, telic), against **unbounded** aspects (imperfective, atelic)

• **E- and R-perfects** preferred; **U-perfect** dispreferred

• **Unbounded** aspects = either cannot occur or must be overtly marked
Boundedness Bias

<table>
<thead>
<tr>
<th>Attested: <strong>Bounded</strong> = default; <strong>Unbounded</strong> = marked</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Viewpoint Aspect</strong></td>
</tr>
<tr>
<td>All Perfects</td>
</tr>
<tr>
<td>English, Bulgarian, Saisiyat</td>
</tr>
<tr>
<td><strong>Situation Aspect</strong></td>
</tr>
<tr>
<td>All Situations</td>
</tr>
<tr>
<td>English, Bulgarian</td>
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</tbody>
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<td><strong>Viewpoint Aspect</strong></td>
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<tr>
<td>Telic Shift</td>
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<table>
<thead>
<tr>
<th>Unattested! (No <strong>Bounded</strong> OR <strong>Bounded</strong> = marked)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Viewpoint Aspect</strong></td>
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<tr>
<td>Only U-Perfect</td>
</tr>
<tr>
<td>NONE!</td>
</tr>
<tr>
<td><strong>Situation Aspect</strong></td>
</tr>
<tr>
<td>Atelic Shift</td>
</tr>
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<td>NONE!</td>
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Accounting for Bias

• Difficulty of ‘Bias’: **U-Perfect** = possible, but **E- and R-Perfектs** = preferred

• PTS theory = too permissive (no bias against **U-Perfect**)

• Result State theory = too restrictive (**U-Perfect** unexpected)
Accounting for Bias

• Option: Bias built into **semantics** of Perfect
  • Perfect 1 can combine with all aspects
  • Perfect 2 can only combine with **bounded** aspects
  • Languages vary between Perfect 1 and Perfect 2

• Liability: no uniform semantics for Perfect
Accounting for Bias

• Claim: Bias due to **syntactic** feature licensing
  • Perfect = [+bounded]; licenses [+bounded] aspect but not [-bounded] aspect
    • [bounded] feature = syntactic; semantics determines value

• Languages vary in licensing of [bounded] feature
  • Option 1: no [-bounded] aspect allowed with Perfect
  • Option 2: [-bounded] aspect must be licensed by overt marking

• Uniform semantics of perfect: PTS
Ingredients of Analysis

• Temporal/aspectual heads relate Z(eit)Ps (Zagona 1990, Stowell 1993)
  • Tense head ($T_0$): relates lower ZP ($t_{\text{Ref}}$) and higher ZP ($t_{\text{Eval}} = \text{Evaluation Time}$)
  • Viewpoint head ($\text{View}_0$): relates lower ZP ($t_{\text{Sit}} = \text{Situation Time}$) and higher ZP ($t_{\text{Ref}}$) (Demirdache and Uribe-Etxebarria 2000)
• Proposal: $\text{Sit}_0$ head introduces $t_{\text{Sit}}$ ZP ($= \text{run time of event}$)
Ingredients of Analysis: the Perfect

- Perfect = Head (Perf$_0$) + ZP
  - Perf$_0$ relates lower ZP ($t_{\text{Ref1}}$) to higher ZP ($t_{\text{Ref2}}$)
  - Right edge of $t_{\text{Ref1}}$ (interval) coincides with $t_{\text{Ref2}}$ (point)
    
    \[ t_{\text{Ref2}}: \quad \cdots \quad \text{Perf}_0 \]
    \[ t_{\text{Ref1}}: \quad \text{Sit} \quad \text{Eval} \]
  - Viewpoint aspect relates $t_{\text{Sit}}$ and $t_{\text{Ref1}}$
  - Tense relates $t_{\text{Ref2}}$ and $t_{\text{Eval}}
[bounded] Feature

• [bounded] feature determined by semantics
  • May relate to quantization/sub-interval property
• Head = [+bounded] iff higher ZP “bounds” lower ZP
  • X “bounds” Y if (part of) X corresponds to an edge of Y
• Head = [+bounded] iff introduces ZP with a “boundary”
  • X is a “boundary” of Y if X is a point at the edge of Y
[bounded] Feature

- **[+bounded]** heads
  - **Perfect**: $t_{\text{Ref}2}$ bounds right edge of $t_{\text{Ref}1}$
  - **Perfective**: $t_{\text{Ref}1}$ bounds both edges of $t_{\text{Sit}}$
  - **Telic**: $t_{\text{Sit}}$ has boundary (telos) at edge of interval (state or process)

- **[-bounded]** heads
  - **Imperfective**: $t_{\text{Ref}1}$ does not bound any edge of $t_{\text{Sit}}$
  - **Atelic**: $t_{\text{Sit}}$ has no boundary (telos), only interval (state or homogenous process)
Licensing [bounded] Feature

• Perfect (Perf$_0$) is [+bounded] → licenses [+bounded] View$_0$ (perfective), Sit$_0$ (telic)

• [-bounded] aspect either needs overt marking to be licensed, or cannot appear at all
  • Overt [-bounded] View$_0$ morphology (progressive, imperfective) licenses [-bounded] Sit$_0$ (state, activity)
Licensing [bounded] Feature

• Option 1: [-bounded] cannot occur below [+bounded] Perf₀
• Unbounded aspect (imperfective, atelic) does not occur or becomes bounded
  • Greek, Niuean: No U-Perfect, Stative \(\rightarrow\) Inchoative
  • Saisiyat: Atelic \(\rightarrow\) Telic
Licensing [bounded] Feature

• Option 2: [-bounded] needs overt marking to be licensed
• Unbounded aspect only occurs if overtly marked
  • Bulgarian: imperfective (overtly marked) → U-Perfect
  • English: progressive (overtly marked) → U-Perfect
    • Unmarked verbs can be [-bounded], but do not form U-Perfect
    • Durative [-bounded] adverbials license U-Perfect with unmarked verbs
      (see Demirdache and Uribe-Etxebarria (2003) for time adverbs containing a ZP-relating head)
Licensing [bounded] Feature: R-Perfect

• Possible account of R-perfect with PTS: [+bounded]
  Viewpoint + Situation aspects required

• Telos (= [+bounded]) occurs within \( t_{\text{Ref1}} (= [+bounded]) \)

  \[
  \begin{align*}
  t_{\text{Ref2}} : & \quad \cdot \quad \cdot \\
  t_{\text{Ref1}} : & \quad \cdot \quad \uparrow \quad \downarrow \\
  t_{\text{Sit}} : & \quad \cdot \quad \rightarrow \\
  \end{align*}
  \]

  \( \text{Perf}_0 [+bounded] \)

  \( \text{View}_0 [+bounded] \)

  \( \text{Sit}_0 [+bounded] \)

• Problem: how to force result state to extend to \( t_{\text{Ref}} \)
Conclusion: Summary

• Perfect has different uses = PTS combined with aspect
• Perfect shows ‘Boundedness Bias’ = combining with bounded aspect preferred, unbounded dispreferred
• ‘Boundedness Bias’ = licensing of [+bounded] feature
  • [+bounded] perfect licenses [+bounded] perfective, telic aspects
  • [-bounded] imperfective, atelic aspects require overt marking to be licensed
Conclusion: Advantages

• Accounts for different effects of Perfect morphology
  • Anteriority + Present relevance: Perf₀
  • Result state: [+bounded] licensing in lower aspect

• Allows for both rich possibility of Perfect readings + preference for bounded readings

• Reconciles variation in Perfect readings with uniform semantics of Perfect (PTS)
Conclusion: Implications

• Modeling other “biases” with [bounded] licensing
  • **Perfective** disprefers atelic predicates
    • **States** disallowed with **perfective** (French)
    • **States** $\rightarrow$ **Inchoatives** with **perfective** (Greek, Russian)
  • Situation aspect determines default Viewpoint or Tense values (Mandarin)
    • **Telic** predicates $\rightarrow$ default **past/perfective** [+bounded]
    • **Atelic** predicates $\rightarrow$ default **present/imperfective** [-bounded]
References

References


• Stowell, Tim. 1993. The syntax of tense. Ms., UCLA.