Telicity, teleological modality, and (non-)culmination

Download our handout:

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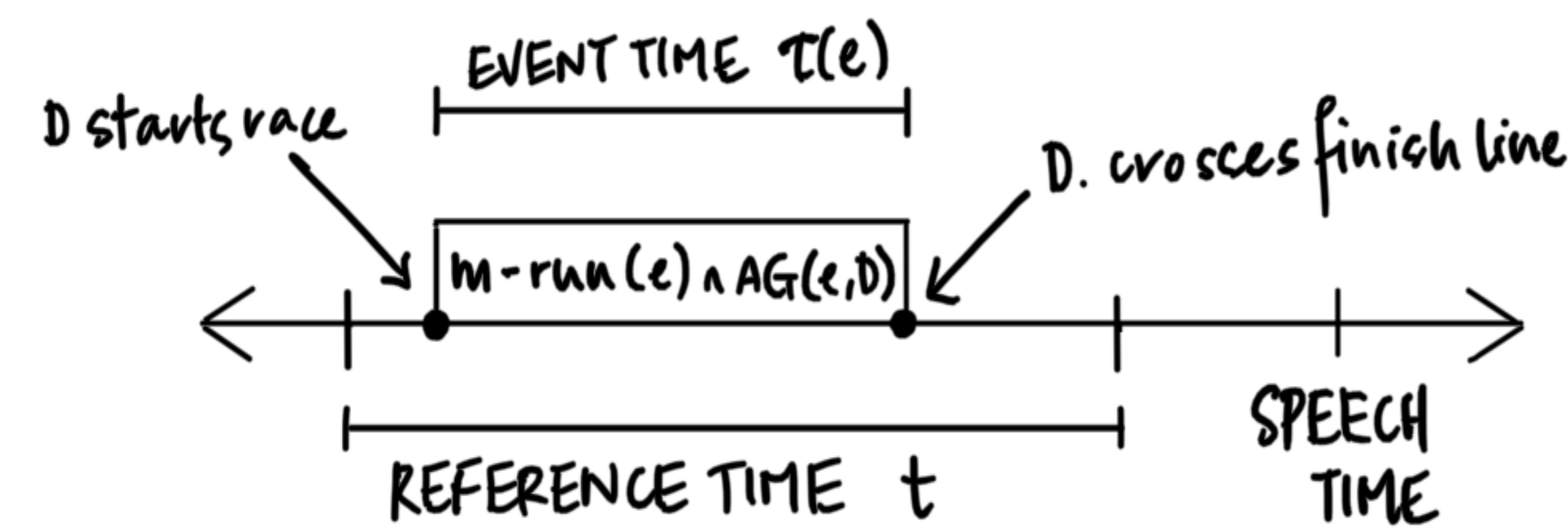
Culmination entailments of telic Ps

CEs are frequently explained by means of:

(i) **bare telic Ps** denoting culminated events
(Dowty 1979, Landman 1992)

(ii) **'included' PF**: (Bhatt & Pancheva 2005)

$[\![PF]\!] := \lambda w \lambda t \lambda P . \exists e[\tau(e) \subseteq t \wedge P(e)(w)]$

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(1) Des ran a marathon
$\equiv PST(PF(D \text{ run a marathon}))$
$\rightarrow$ *She traversed the full race path*

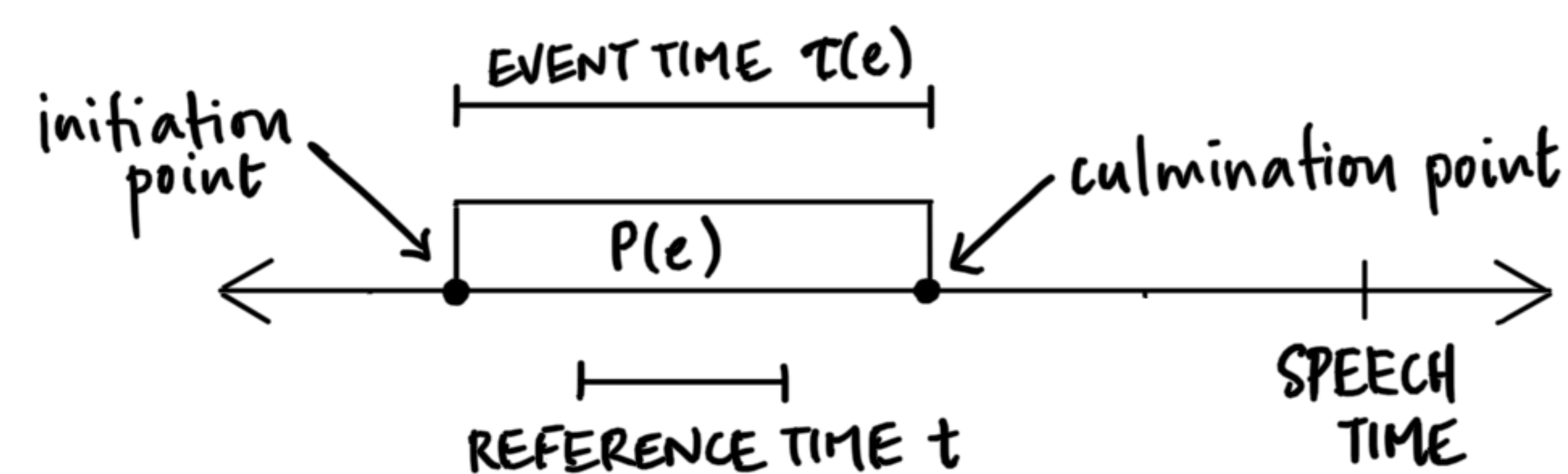## The imperfective paradox

PROGs of telic Ps need not culminate:

(2) Mahler was writing a tenth symphony
(when he died). $\not\rightarrow$ *He completed it.*
($\not\rightarrow$ *Mahler wrote a tenth symphony*)

Extensional 'including' PROG:
yields ongoing events, but **forces culmination** to take place in the evaluation world

$[\![PROG]\!] := \lambda w \lambda t \lambda P . \exists e[\tau(e) \supseteq t \wedge P(e)(w)]$

Resolving the paradox

Existing approaches:

(I) **Extensional PROG**:   (e.g., Parsons 1990)
 - telic Ps denote (non-)culminated events
 - PROG can instantiate P *sans* culmination

(II) **Intensional PROG**:   (e.g., Dowty, Landman)
 - telic Ps denote (only) culminated events
 - modal PROG locates event onsets in w^*, culminations in modal alternatives

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Our claim: the 'paradox' is due to intensionality inherent in telic Ps, not in PROG

Telicity and intensionality

Telic P denotes **nested temporal slices** of teleological alternatives for its culmination condition

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Given world w and context k:
- let D be a context-dependent **model of causal relationships** between propositions   (Pearl 2000)
- let $s \subseteq k$ be a (starting) situation which: (i) contains CC-relevant circumstances
                    (ii) does not exhaust its causal consequences
- $e \in [\![P]\!]^k$ iff e is a **continuous causal development** of s at start time t_0 in a teleological alternative for CC with causal ordering source based on D (cf. Kaufmann 2013)
- for $e_1, e_2 \in [\![P]\!]^k$, $e_1 \sqsubseteq e_2$ iff: (i) e_2 is an **optimal causal development** of e_1,
                   (ii) $\exists e_3 \in [\![P]\!]^k$ s.t. $e_1, e_2 \sqsubseteq e_3$, and e_3 verifies CC

Positive consequences of our approach:
- **no imperfective paradox:** extensional PROG can instantiate non-culminated $e \in [\![P]\!]^k$
- $[\![P]\!]^k$ is sensitive to 'inertial' (causal) developments based on context, permitting variation based on participants, circumstances, perspectives . . .   (cf. Landman, Asher 1992, Bonomi 1997, a.o.)
- **bonus:** a unified extensional approach to **non-culminating perfectives** of accomplishments
- **looking ahead:** a unified treatment of culmination entailments and ability modals' **actuality entailments** (Bhatt 1999)   **(see handout for further details)**

Proposal

An enriched mereology for telic Ps:
- $[\![P]\!]$ contains culminated & non-culminated parts of **teleologically-optimal worlds**
- $[\![P]\!]$ is structured by a **culmination condition** (CC; Kratzer 2004), as a **goal** structures teleological alternatives

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Teleological alternatives in w, given goal G, circumstantial f, stereotypical g:
$$\{w' : \text{Best}_{g(w)}((\cap f(w)) \cap G)\}$$

(cf. von Fintel & Iatridou 2005)

Non-culminating accomplishments

(Non-)culminating PFs receive a unified treatment in terms of **MAX operators**
(Filip & Rothstein 2005, Altshuler 2014)

Weak PF_1 indicating **cessation**, not culmination, combines with **local MAX**:

$[\![PF_1]\!] := \lambda w \lambda t \lambda P . \exists e[\tau(e) \subseteq t \wedge e \in w \wedge \boxed{MAX(w,e,P)}]$

$\downarrow$

$\boxed{P(e) \wedge \forall e' \in w [(P(e') \wedge e \sqsubseteq e') \rightarrow e' = e]}$

Hindi simple PF_1:   (Singh 1998, a.o.)
(3) *maayaa-ne biskuT-ko   khaa-yaa* . . .
 Maya-ERG cookie-ACC eat-PF_1 . . .
 ✓. . . *lekin use puuraa nahiin khaa-yaa*
  . . . but it whole not eat-PF_1
 # . . . *aur use ab-tak   khaa rahii   hai*
  . . . and it now-until eat PROG PRS

Strong, culminating PF_2 combines with **absolute MAX$_{abs}$**:

$[\![PF_2]\!] := \lambda w \lambda t \lambda P . \exists e[\tau(e) \subseteq t \wedge e \in w \wedge \boxed{MAX_{abs}(e,P)}]$

$\downarrow$

$\boxed{P(e) \wedge \forall e'[(P(e') \wedge e \sqsubseteq e') \rightarrow e' = e]}$

Hindi compound PF_2:
(4) *maayaa-ne biskuT-ko   khaa liyaa* . . .
 Maya-ERG cookie-ACC eat PF_2 . . .
 # . . . *lekin use puuraa nahiin khaa-yaa*
  . . . but it whole not eat-PF_1

Future exploration:
the **typological** and **pragmatic landscape** of included/including aspects, MAX requirements