Download our handout:

Telicity, teleological modality, and (non-)culmination

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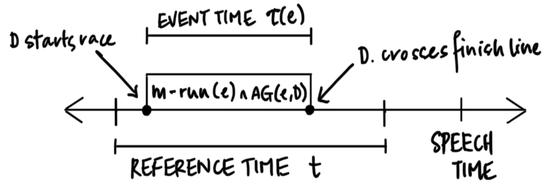
Culmination entailments of telic *P*s

CEs are frequently explained by means of:
(i) **bare telic** *P*s denoting culminated events (Dowty 1979, Landman 1992)
(ii) **'included' PF**: (Bhatt & Pancheva 2005)
$[\![\text{PF}]\!] := \lambda w \lambda t \lambda P\,.\,\exists e[\tau(e) \subseteq t \wedge P(e)(w)]$

(1) Des ran a marathon
≡ PST(PF(*D* run a marathon))
→ *She traversed the full race path*

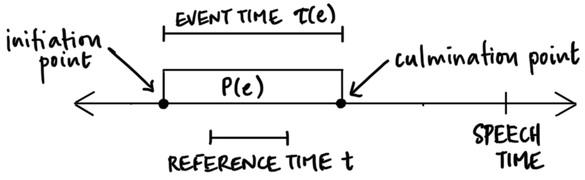


The imperfective paradox

PROGs of telic *P*s need not culminate:

(2) Mahler was writing a tenth symphony (when he died). ↛ *He completed it.*
(↛ *Mahler wrote a tenth symphony*)

Extensional 'including' PROG:
yields ongoing events, but **forces culmination** to take place in the evaluation world
$[\![\text{PROG}]\!] := \lambda w \lambda t \lambda P\,.\,\exists e[\tau(e) \supseteq t \wedge P(e)(w)]$



Resolving the paradox

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

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

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

Proposal

An enriched mereology for telic *P*s:
- $[\![P]\!]$ 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

Teleological alternatives in w, given goal G, circumstantial f, stereotypical g:
$\{w' : \text{Best}_{g(w)}((\cap f(w)) \cap G)\}$ (von Fintel & Iatridou 2005)

Telicity and intensionality

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

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)

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**:
$[\![\text{PF}_1]\!] := \lambda w \lambda t \lambda P.\exists e[\tau(e) \subseteq t \wedge e \in w \wedge \boxed{\text{MAX(w,e,P)}}]$
↓
$P(e) \wedge \forall e' \in w\,[(P(e') \wedge e \sqsubseteq e') \rightarrow e' = e]$

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$_{abs}$**:
$[\![\text{PF}_2]\!] := \lambda w \lambda t \lambda P.\exists e[\tau(e) \subseteq t \wedge e \in w \wedge \boxed{\text{MAX}_{abs}\text{(e,P)}}]$
↓
$P(e) \wedge \forall e'[(P(e') \wedge e \sqsubseteq e') \rightarrow e' = e]$

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