ASPECT-BASED THEORY (2):
Aspectual universals of temporal anaphora (Bittner 2006)

1 Processes

• Quantification versus discourse reference

(1) **Event** of asking:
When I finished reading the instructions, Jim asked me: “What do I do first?”
   a. … At that instant the phone rang.
   b. … #This process took a long time.

(2) **Process** of asking:
As we worked our way through the instructions, Jim and Tom asked me over and over, by turns, with increasing desperation: “What do I do next?”
   a. … #At that instant the phone rang.
   b. … This process left us all exhausted.

• Part-whole anaphora with processes

(3) **Event/State** (atomic episode): #Anaphora to stages
   a. John **arrived** last night. At that instant the phone rang. #**First** he rang the doorbell. #**Next** he said: ‘Hello’
   b. At the end of his life John **had** a beautiful house. #**First** he sat in the living room, admiring every detail. #**Next** he sat in the kitchen.

(4) **Process**:
John **built** a house last year.
   • • • **ee**: John builds house
     **First**…
     … he hired an architect.
     • • • **ee**: John builds house
     **Next** he hired a contractor.
     • • • **ee**: John builds house
     At the end
     … he was very pleased.

• Universals of temporal anaphora with processes

R. Aspect-based reality presuppositions (v. 2)

From a \( \mathcal{W} \)-real point-of-view \( \mathcal{T} a \), the viewer may report:
• a state \( s \) as a fact, iff the onset of \( s \) precedes \( \mathcal{T} a \) in \( \mathcal{W} \)
• an event \( e \) as a fact, iff \( e \) precedes \( \mathcal{T} a \) in \( \mathcal{W} \)
• a process \( ee \) as a fact, iff stage 1 of \( ee \) precedes \( \mathcal{T} a \) in \( \mathcal{W} \)

L’ Aspect-based location wrt topical instant (v. 2)

In the topical modality,
• a state is current at the topical instant
• an event has a current result state at the topical instant
• stage 1 of a process has a current result state at the topical instant
L  Aspect-based location wrt topical period (v. 2)

In the topical modality,
- a state is current during the topical period
- an event occurs within the topical period
- stage 1 of a process occurs within the topical period

(5) Reality (R) & discourse-initial location (L'): state, event, process

Ole \{sinip-pu-q, \*itir-pu-q, skakkir-pu-q\}
Ole \{be.asleep-IND-IV-3s, wake.up-IND-IV-3s, play.chess-IND-IV-3s\}
Ole \{is asleep, has woken up, is playing chess\}.

(6) Discourse-internal location (L): state, event, process

Ataata-ga angirlar-m-at
dad-1s.sg come.home-FCT-3s
When my dad came home,
\{sinip-pu-nga, itir-pu-nga skakkir-pu-gut\}
\{be.asleep-IND-IV-1s, wake.up-IND-IV-1s, play.chess-IND-IV-1p\}
\{I was asleep, I woke up, we played chess\}.

(7) The next day a big mob of kayaks set out to finish off Aataarsuaq’s family [i.e. his wife and his son], but a cousin had warned them about this during the night.

₁Nukappiara-q suli sinit-tu-q
boy-sg still asleep-ELA-3s
While the boy was still asleep,
qajar-pa-ssu-it nui-a-lir-pu-t.
kayak-group-big-pl appear-together-begin-IND-IV-3p
the leaders of the kayak mob appeared [on the horizon].

₂Arna-a-ta itir-sar-pa-a.
mother-3sg-ERG wake.up-causal.process-IND-TV-3s
The [boy]’s mother shook him awake.

[S: 31]

U  Aspect-based temporal update (v. 2)

If a verb evokes an episode a and updates the topic time to \(\tau_t\), then:
- \(\tau_t\) is the time of a, if a is a state
- \(\tau_t\) is the result time of a, if a is an event
- \(\tau_t\) is the result time of stage 1 of a, if a is a process

(8) Temporal update (U): state, event, process

Ataata \{sini-mm-at tikim-m-at, aggir-m-at\}
dad \{be.asleep-FCT-3s, come-FCT-3s, approach-FCT-3s\}
When dad {was asleep, arrived, was on the way}
anaana sianir-vig-a-anga.
mum ring-to-IND-TV-3s
mum gave me a ring.
D. Aspect-based temporal defaults (v. 2)

Given a \( \tau \text{-real point-of-view} \) \( \tau a \), the default topic time is:
- the instant of \( \tau a \text{-onset in } \tau w \), if \( \tau a \) is a state
- the instant of \( \tau a \) in \( \tau w \), if \( \tau a \) is an event
- the kind of time instantiated, at each stage \( e \) of \( \tau a \), by the instant of \( e \) in \( \tau w \) if \( \tau a \) is a process

\((\text{ee})\) Start-up update: Speech process
- \( \tau_0 \): \( \tau a \text{-real} \)

\( \tau_0 \text{-agt speaks} \)

\( \tau_0 \text{-stage.instants} \)

(9) a. Now the villain \textit{seizes} the heroine, now they \textit{drive} off towards the railway track, now he \textit{forces} her out of the car, now he \textit{ties} her to the track, while all the time the train is getting nearer. [Comrie 1976]

b. You are elected, but you are not. [Schlenker 2003]

4 Habits

- **Quantification versus discourse reference**

(10) Habitual state:
Whenever he finishes reading instructions, Jim \textit{is confused}: “What do I do first?” This \{habit, #state, #process, #fact\} has already cost him two jobs.

(11) Habitual event:
When I finish reading instructions, Jim often \textit{asks} me: “What do I do first?” Today I told him to quit this \{habit, #state, #process, #fact\} or else.

(12) Habitual process:
Whenever we worked our way through instructions, Jim and Tom \textit{would} routinely \textit{ask} me, by turns, with fading hope: “What do I do next?” They were increasingly likely to do this and after the \( n \)th time I finally had enough of this \{habit, #state, #process, #fact\}.

- **Part-whole anaphora with habits**

(13) Habit: \( \checkmark \) Anaphora to instance
[Bertil has ordered a bike to arrive on the annual ship. She can’t wait.]

\( \text{\textit{Bertil-p } } \text{iliqur-i-innar-lir-sima-va-a} \)

Bertil \text{sg.ERG} \text{habit.of-have.as-} \text{\textit{\forall-begin-prf-IND.TV-3s.3s}}

Bertil \( \tau \) had formed an invariable \text{habit, …}

\( \text{\textit{illu-min-niit } } \text{ani-niariar-lu-ni} \)

home-3p\( \tau \text{-sg.ABL} \text{go.out-have.just-ELA}_{\tau}-3s_{\tau} \)

…upon going out of the house,

\( \text{\textit{umiarsuu-p } } \text{nui-vvi-ssa-a-ta} \)

ship \text{sg.ERG} \text{appear-point-expected-3s}_{\tau-\text{sg.ERG}}

\( \text{\textit{tunga-a-nut } } \text{isigi-sar-lu-ni.} \)

direction-3s_{\tau-\text{sg-DAT} \text{look-habit-ELA}_{\tau}-3s_{\tau}}

… of looking toward the point where the ship would appear.

\( \text{\textit{Aima=lu } } \text{ani-ga-mik } \text{aamma } \text{\textit{taama-ililur-pu-q}} \)

Aima=and \text{go.out-FCT}_{\tau}-3p\tau \text{ also thus-do-IND.IV-3s}

[Now], when she\( \tau \text{ went out with Aima, she also did that.} \) [P: 51]
(14) Habit + kind (of proposition): ✓ Anaphora to instances
My father plays chess. The next day he often says: ‘I won’. The first time I doubted it.
[Bittner in press]

- **Universals of temporal anaphora with habits**

**L' Aspect-based location wrt topical instant**

In the topical modality,
- a state is current at the topical instant
- an event has a current result state at the topical instant
- stage 1 of a process has a current result state at the topical instant
- a habit is current (but possibly not instantiated) at the topical instant.

(15) \{Niaqu-ngu-vu-nga, niaqu-ngu-sar-pu-nga\}
    \{head-ache-IND.IV-1s, head-ache-habit-IND.IV-1s\}
    \{I have a head ache, I have head aches.\}

(16) Ataata-ga \{skakkir-pu-q, skakkir-tar-pu-q\}
    dad-1s.sg \{play.chess-IND.IV-3s, play.chess-habit-IND.IV-3s\}
    My dad \{is playing chess, plays chess\}.

**L Aspect-based location wrt topical period**

In the topical modality,
- a state is current during the topical period
- an event occurs within the topical period
- stage 1 of a process occurs within the topical period
- a habit is current (but possibly not instantiated) during the topical period.

(17) ¹As soon as his new son was born, the father took him out and ran off with him
down to the shore. ²There he dipped his head in a puddle for a long time.
³*Taava* tuavi=innaq illu-min-nut majuup-pa-a.
    then hurry=∀ home-3p.sg-DAT carry.up-IND.TV-3s.3s
    Then he carried him [back] up home, hurrying all the way.
⁴*Taama-iluur-tuar-pa-a.*
    thus-do-regularly.do-IND.TV-3s.3s
    He did that to him on a regular basis.
⁵Every morning when he woke up, while his son was still asleep,
    he took him out, always down to the shore. [S: 27–28]

**L'' Aspect-based location wrt topical kind of time**

Let h be a habit located at a topical kind of time $^\tau k$. Then in each $^\tau k$-world at each $^\tau k$-time, there is
an h-episode:
- located according to L, if $^\tau k$-times are (discourse) periods
- located according to L', if $^\tau k$-times are (discourse) instants
U. Aspect-based temporal update

If a verb evokes a and updates the topic time to $^\tau t$ or $^\tau k^\tau$, then:

- $^\tau t$ is the time of a in the topical modality, if a is a state.
- $^\tau t$ is the result time of a in the topical modality, if a is an event.
- $^\tau t$ is the result time of stage 1 of a in the topical modality, if a is a process.
- $^\tau k^\tau$ is the kind of time such that, in each a-world,
  a. sends each a-state to its time, if a is a habitual state.
  b. sends each a-event to its result time, if a is a habitual event.
  c. sends stage 1 of each a-process to its result time, if a is a habitual process.

(18) Update by habitual {state, event, process}; location of habitual event

Ataata {naparsima-gaang-at, tikik-kaang-at, aggir-aang-at}
dad {be.ill-HAB$_1$-3s$_1$, arrive-HAB$_1$-3s$_1$, approach-HAB$_1$-3s$_1$

When dad {is ill, comes (home), is on the way}

anaana-ma sianirvigi-sar-pa-anga.
mum-1s.sg.ERG ring.to-habit.IND.TV-3}.1s
mum gives me a ring.

(19) Update by habitual {state, event, process}; location of habitual state

Ataata {naparsima-gaang-at, tikik-kaang-at, aggir-aang-at}
dad {be.ill-HAB$_1$-3s$_1$, arrive-HAB$_1$-3s$_1$, approach-HAB$_1$-3s$_1$

When dad {is ill, comes (home), is on the way}

anaana nikallu-nga-sar-pu-q.
mum get.depressed-state-habit.IND.TV-3s
mum is depressed.

R. Aspect-based reality presuppositions

From a $^\tau w$-real (episodic) point-of-view $^\tau a$, the viewer may report:

- a state s as a fact iff the beginning (onset) of s precedes $^\tau a$ in $^\tau w$
- an event e as a fact iff e precedes $^\tau a$ in $^\tau w$
- a process ee as a fact iff the beginning (stage 1) of ee precedes $^\tau a$ in $^\tau w$
- a habit h as a fact iff the beginning (episode 1) of h precedes $^\tau a$ in $^\tau w$

(20) [Susan has visited me in N.Y. once, we had fun & I hope she’ll come again.]

Susan New Yorki-mut tikik-kaang-at nuannisaar-tar-pu-gut.
When Susan comes to New York, we have fun.

(21) Pelletier & Asher 1997

a. Kim handles the mail from Mars.
b. Members of this club support each other in emergencies.
D. Aspect-based temporal defaults

Given a $\tau$-real point-of-view $\tau a$, the default topic time is:

- the instant of $\tau a$-onset in $\tau w$, if $\tau a$ is a state
- the instant of $\tau a$ in $\tau w$, if $\tau a$ is an event
- the kind of time instantiated in $\tau w$, at each stage $e$ of $\tau a$, by the $\tau w$-instant $e$, if $\tau a$ is a process
- the kind of time instantiated, in any $\tau a$-world $w$, by the $w$-instants of $\{\tau a$-state.onsets, $\tau a$-events, $\tau a$-process.stages}, if $\tau a$ is a habitual $\{state, event, process\}$

(22) When he finishes reading instructions, Jim is usually confused: “What do I do first?”
(23) When I finish reading instructions, Jim usually asks me: “What do I do first?”
(24) When we worked our way through instructions, Jim and Tom usually asked me, by turns, with fading hope: “What do I do next?”
### Appendix: Overview of Aspect-Based Universals

**D (temporal defaults)**

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**L' (loc wrt $^\tau$instant)**

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**L'' (loc wrt $^\tau$kind.of.time)**

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