SYNOPSIS

- Cold open: the typology of motion macro-event descriptions
- The syntax of macro-event descriptions
- The cognitive motivation behind the Macro-event property
- Macro-event synthesis
- Back to motion
- Summary

COLD OPEN: THE TYPOLOGY OF MOTION MACRO-EVENT DESCRIPTIONS

- the Macro-event property (MEP)
  - the aim: operationalize typologists’ intuitions about constructions that describe “single events”

Macro-event property (MEP): “A construction C that encodes a (Neo-)Davidsonian event description $\exists e. P(e)$ (‘There is an event e of type/property P’) has the MEP iff C has no constituent C’ that describes a proper subevent $e'$ of e such that C’ is compatible with time-positional modifiers that locate the runtime of $e'$, but not that of the larger event e.” (Bohnemeyer & Van Valin 2017: 147)
examples

(1.1)a. No MEP construction; distinct time adverbials fine

Floyd left Nijmegen at 11:00am. He passed through Moers at noon and reached Düsseldorf at 12:30pm.

b. MEP construction; distinct time adverbials anomalous

#Floyd went from Nijmegen at 11:00am to Düsseldorf at 12:30pm via Moers at noon.

c. MEP construction; acceptable: single adverbial denoting interval that encompasses all subevents

On Wednesday, Floyd went from Nijmegen to Düsseldorf via Moers.

the MEP in the motion domain: Bohnemeyer et al (2007)

- a study of 18 languages from 16 genera
  - based on a production task involving descriptions of animated video clips plus a questionnaire study

findings I:
- 3 types in terms of motion subevents conflatable in a single macro-event description

findings II: type membership is predicted by framing type
- but the predictive classification is more fine-grained than the S/V distinction

Type I: S-framed or serializing

Type II: V-framed but ‘double-marking’

Type III: ‘radical’ V-framing

(1.2) a. Monoclausal MEP construction, subevent timing barred

Lao

芒3 lèn⁴ (qiōk⁴) caak⁵ hiian⁵ taam⁵ thang⁴ hōo⁵ kōo⁴ hiim⁴.

He ran (exited) from the house, followed the path, reached the rock.

b. Multiclausal non-MEP construction, subevent timing fine

Lao

芒3 nüing⁴ moong⁵ lèn⁴ (qiōk⁴) caak⁵ hiian⁵ taam⁵ thang⁴ hōo⁵ kōo⁴ hiim⁴.

[3 one hour run exit from house]v [follow path]v [reach cl-rock]v
At one he ran, exited from the house, followed the path. (and) at two he reached the rock.

Figure 1. The three segmentation types (Bohnemeyer et al. 2007: 517)
the MEP in the motion domain: Bohnemeyer et al (2007) (cont.)

Type II: V-framed, but double-marking

(1.3) a. Monoclausal MEP construction, subevent timing barred

JPN  (Kinno)  ki-no tokoro-kara i-made it-ta.
    yesterday tree-GEN place-ABL house-until go-PAST
    "[One] went from the tree to the house (yesterday)."

b. Non-MEP converb construction, subevent timing fine

(San-ji-ni)  ki-no tokoro-o shappatsu-shi-te, (yu-ji-ni)
    three-o'clock tree-GEN place-ACC departure-do-conj four-o'clock-DAT
    kawa-o watat-te, (go-ji-ni)
    river-ACC cross-CON five-o'clock-DAT house-DAT arrive-PAST
    "Leaving the tree (at three), crossing the river (at four), [one] arrived at
    the house (at five)."

Type III: radical V-framing: no path expression outside the verb root

(1.5)    Non-MEP construction with explicit temporal sequencing

YUC

"The little thing that’s red, it went rolling, and then"

Type III: three macro-event expressions

Jalonke, Kilivila, Saliba, Tidore, Tzeltal, Yélî Dîye, Yukatek, Zapotec

integrating route paths into a macro-event expression is subject to the ‘coextensiveness constraint’
(Matsumoto 1996: 269)

Figure 2. Bay semantics

the MEP in the motion domain: Bohnemeyer et al (2007) (cont.)

Type II: V-framed, but double-marking (cont.)

(1.4) a. Monoclausal MEP construction, route path integration

JPN

a.  #Jon-wa Bei Buriji-o Poro Arito-kara Banskirei-ni watat-ta.
    John-top Bay Bridge-MX Palo Alto-ABL Berkeley-DAT cross-PAST
    ‘John crossed the Bay Bridge from Palo Alto to Berkeley.’ (Japanese)

b.  Jon-wa Bei Buriji-o San Furanshiisuko-kara Oosurando-ni
    John-top Bay Bridge-MX San Francisco-ABL Oakland-DAT
    cross-PAST
    ‘John crossed the Bay Bridge from San Francisco to Oakland.’

Type III: radical V-framing: no path expression outside the verb root

(1.5)    Non-MEP construction with explicit temporal sequencing

YUC

"it passes by a little thing that’s also red"

Figure 3. ECOM E5

k-u = ts’o’-k-ol-e’,  k-u = k’uch-ul  y = iknal le = triangulo
[IMPf-A.3 = end-INC-TOP]  [IMPf-A.3 = arrive-INC A.3 = at  DEF = triangle
    âsؤول = 0’.
    blue(b.35G) = 0.2]
    ‘and then it arrives at the blue27 triangle.’

Figure 3. ECOM E5
the MEP in the motion domain: Bohnemeyer et al. (2007) (cont.)

findings III: apparent universal constraints on macro-event expressions

- the **Argument Uniqueness Constraint (AUC)**
  - no semantic role assigned more than once per MEP expression
  - Bohnemeyer & Van Valin (2017) restrict this to roles not tied to causally related subevents
  - so one can assign agent/effector twice in an MEP expression
  - as long as one is treated as causer and the other as causee

- the **Referential Uniqueness Constraint (RUC)**
  - multiple references to the same individual/place in the same MEP expression are dispreferred
  - unless they are explicitly flagged (reflexives)

- the **Macro-event Linking Principle**
  - the semantic roles assigned by an MEP expression are constrained by the semantic relations
  - the expression entails to hold among the subevents

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**Figure 4.** An illustration of the UVC: two vector specifications without event segmentation if the vectors are collinear (1.6), but requiring syntactically explicit segmentation if not (1.7)
THE SYNTAX OF MACRO-EVENT EXPRESSIONS

‣ Bohnemeyer & Van Valin (2017): the Core-MEP Hypothesis

**Core-MEP Hypothesis:** Across languages:

i. Single-core constructions necessarily have the MEP.
ii. Multi-core constructions have the MEP only in case their cores are in cosubordinate linkage; they lack the MEP otherwise. (Bohnemeyer & Van Valin 2017: 158)

‣ Illustration I: an MEP construction (‘core cosubordination’)

Figure 5. Core cosubordinations have the MEP (Bohnemeyer & Van Valin 2017: 167)

THE SYNTAX OF MACRO-EVENT EXPRESSIONS (CONT.)

‣ Bohnemeyer & Van Valin support this analysis with evidence from
  ‣ English infinitival complement constructions
  ‣ Ewe serial verb constructions
  ‣ Japanese converb constructions

THE SYNTAX OF MACRO-EVENT EXPRESSIONS (CONT.)

‣ Illustration II: a non-MEP construction (‘core coordination’)

Figure 6. Core coordinations lack the MEP (Bohnemeyer & Van Valin 2017: 159)

THE SYNTAX OF MACRO-EVENT EXPRESSIONS (CONT.)

‣ bonus: a possible explanation for the pervasive occurrence of control in core cosubordinations
  ‣ via the Referential Uniqueness Constraint

Figure 7. Obligatory control in core cosubordinations (Bohnemeyer & Van Valin 2017: 191)
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SYNOPSIS

The cognitive motivation behind the Macro-event property

as we were working on the later stages of Bohnemeyer & Van Valin (2017)
Van drew my attention to the patterns outlined below
at this point, I had become so used to fending off all attempts at tying the MEP to conceptual “macro-events”
that I had lost track of the question what kinds of events actually get described by macro-event expressions
therefore, I think it appropriate to name the following hypothesis in Van’s honor

Van Valin’s Conjecture: For a conceptual event representation to be expressible by a macro-event construction, the event representation must have a certain mereological structure: in particular, its subevents must be contiguous or overlapping.

- MEP candidate events; Type A
- matrix refers to a subevent of the complement event or vice versa

(4.1) a. Sally began to compose her 3rd symphony
b. On Tuesday, Sally began to compose a symphony #on Friday
c. On Tuesday, Sally began to compose a symphony within a week

Weird: the onset of the composition event fell within a weeklong interval starting Tuesday?
Out: S. started the composition event on Tuesday and completed it within a week

Figure 8. The Interclausal Relations Hierarchy (Van Valin 2005: 208) and the MEP
MEP candidate events; Type A (cont.)

a twist: the Means construction (Bellingham ms.)

Floyd broke the internet on Tuesday by posting a picture of his cat on Monday

the Means construction specifies the cause of the breaking event in (4.2), which is encoded by break itself

however, this overlap is arguably not part of the construction meaning

Sally won the lottery by buying all the tickets

Floyd got lost by following his navigation app

MEP candidate events; Type B

matrix and complement events overlap or are necessarily contiguous

Floyd sang himself hoarse

On Monday, Floyd sang himself hoarse on Tuesday

Sally made Floyd switch his voter registration

On Monday, Sally made Floyd switch his voter registration on Tuesday

On Monday, Sally caused Floyd to switch his voter registration on Tuesday

\[
\text{[make}_{\text{CAUS}}] = \lambda e_1, \lambda e_2, \lambda x, \lambda y, \lambda P. \text{AGENT}(e_1)(x) \land \text{PATIENT}(e_1)(y) \land \text{AGENT}(e_2)(y) \land P(e_2) \land \text{CAUSE}(e_2)(e_1) \land \tau(e_2) \subseteq \tau(e_1)
\]

MEP candidate events; Type C

psych action I: realization dependence - agent (fails to) effect(s) realization of the complement action

On Monday, Floyd tried to sell his car on Tuesday

On Monday, Floyd managed to sell his car on Tuesday

On Monday, Floyd failed to sell his car on Tuesday

\[
\text{[try]} = \lambda e_1, \lambda e_2, \lambda x, \lambda P. \text{AGENT}(e_1)(x) \land \text{OUTCOME}(e_2)(e_1) \land P(e_2)
\]

the semantics of OUTCOME would have to be such that it entails

(i) intensionality of \(P(e_2)\) and (ii) contiguity b/w \(e_1, e_2\)

psych action in the sense of Van Valin (2005) does not appear to be a homogenous class vis-à-vis the MEP

psych action II: realization independence - agent (?) entertains merely a representation of the realization

On Monday, Sally decided to sell her car on Tuesday

On Monday, Sally wanted to sell her car on Tuesday

On Monday, Sally planned to sell her car on Tuesday
what about non-MEP interclausal relations?

![Figure 9. The Interclausal Relations Hierarchy (Van Valin 2005: 208) and the MEP](image)

- MEP
  - MEP
  + MEP

- Events involving representations of other events
- Relations b/w propositions or speech acts

- at the edge of the MEP:
  - events containing representations of other events

<table>
<thead>
<tr>
<th>Example</th>
<th>Complement represents</th>
<th>Matrix represents</th>
<th>Realization dependence</th>
<th>Realization dependence on event?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sally drew a picture of the chicken crossing the road</td>
<td>Picture</td>
<td>Drawing event</td>
<td>Yes (on the picture)</td>
<td>No</td>
</tr>
<tr>
<td>Sally said “The chicken crossed the road”</td>
<td>Utterance</td>
<td>Speech act</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Sally said that the chicken had crossed the road</td>
<td>Utterance-content hybrid</td>
<td>Yes</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Sally thought “The chicken crossed the road”</td>
<td>Internal speech</td>
<td>Thought event</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Sally thought that the chicken had crossed the road</td>
<td>Proposition</td>
<td>Yes</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Sally saw the chicken cross the road</td>
<td>Event</td>
<td>Perception event</td>
<td>Yes?</td>
<td>No?</td>
</tr>
<tr>
<td>Sally saw that the chicken had crossed the road</td>
<td>Proposition</td>
<td>Inference</td>
<td>Yes</td>
<td>No? (But realization is presupposed)</td>
</tr>
</tbody>
</table>

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MACRO-EVENT SYNTHESIS

- if Van Valin’s Conjecture is correct
  - the interclausal relation plays a greater role in determining whether a given event description has the MEP
- the question then arises
  - whether the MEP can be derived purely from the semantics of the interclausal relation alone
  - or whether the MEP is a construction meaning that is motivated by the interclausal relation
  - but does not follow from it alone

(5.1) a. No MEP construction; distinct time adverbials fine
  Floyd left Nijmegen at 11:00 am. He passed through Moers at noon and reached Düsseldorf at 12:30 pm.

b. MEP construction; distinct time adverbials anomalous
  Floyd went from Nijmegen at 11:00 am to Düsseldorf at 12:30 pm via Moers.

c. MEP construction; acceptable: single adverbial denoting interval that encompasses all subevents
  On Wednesday, Floyd went from Nijmegen to Düsseldorf via Moers.

- in (5.1b), the time adverbials can be argued to be incompatible with the path PPs since these have the wrong semantic type
  - time adverbials combine only with eventive expressions

MACRO-EVENT SYNTHESIS (CONT.)

(5.2) a. On Tuesday, Sally began to compose a symphony.
  She completed it within a week

b. On Tuesday, Sally began to compose a symphony ??within a week

- it “makes sense” that combining the time frame adverbial with the phase verb leads to strange, unintended interpretations
  - but why does the adverbial not attach to the complement?
  - semantics alone cannot explain this, as shown below

(5.2) b’. compose a symphony:
  \( \lambda e. \exists y. \lambda x. \text{compose}'(e) & \text{agent}'(e)(x) & \text{theme}'(e)(y) & \text{symphony}'(y) \)

compose a symphony within a week:
  \( \lambda e. \exists y. \lambda x. \text{compose}'(e) & \text{agent}'(e)(x) & \text{theme}'(e)(y) & \text{symphony}'(y) \& \text{duration}'(e) \leq 1 \text{ week} \)

begin to compose a symphony within a week:
  \( \lambda e_1, \lambda e_2, \lambda y. \lambda x. \text{onset}'(e_1)(e_2) & \text{compose}'(e_2) & \text{agent}'(e_2)(x) & \text{theme}'(e_2)(y) \& \text{symphony}'(y) \& \text{duration}'(e_2) \leq 1 \text{ week} \)

MACRO-EVENT SYNTHESIS (CONT.)

(5.2) a. On Tuesday, Sally began to compose a symphony.
  She completed it within a week

b. On Tuesday, Sally began to compose a symphony ??within a week

- the semantic incompatibility of the time frame adverbial in (5.2b) must be related to the syntactic structure of the sentence

- RRG postulates that cosubordination involves fusion of the matrix and complement cores

- resulting in a single superordinate core with a single periphery - so all modifiers are shared

Figure 10. Syntactic analysis and semantic anomaly of (5.2b)
The semantic effect of the Macro-event property can also be viewed as a cognitive operation. Talmy (2000: Vol. I: Chapter 1) proposes a typology of the processes used by natural language grammars to guide the hearer’s attention to the states of affairs under discussion.

Factors governing the distribution of attention over a referent scene:
- Strength of attention
- Pattern of attention
- Mapping of attention (profiling as in Frame Semantics)

Figure 11. Talmy’s (2000: Vol. I: 76-77) typology of attention direction mechanisms and the MEP

- it is characteristic of Gestalt synthesis that it changes affordances/privileges for predication and modification

(5.4) a. That cluster of trees is small
    b. The trees in that cluster are small
(5.5) a. The bricks in the pyramid came crushing together / #in upon itself
    b. The pyramid of bricks came crushing in upon itself / #together (Talmy 2000: Vol. 1: 78)
(5.6) a. The cluster of trees had a diameter of 100m
    b. The trees had a diameter of 100m
**MACRO-EVENT SYNTHESIS (CONT.)**

- **Macro-event synthesis** has two effects on temporal modifiers
  - it blocks subevent modifiers
  - it enables macro-event modifiers

(5.7)a. Floyd left Nijmegen at 11:00am. He passed through Moers at noon and reached Düsseldorf at 12:30pm
b. Floyd went from Nijmegen at 11:00am to Düsseldorf at 12:30pm via Moers at noon.

(5.8)a. In 90 minutes, Floyd left Nijmegen. He passed through Moers and reached Düsseldorf
b. In 90 minutes, Floyd went from Nijmegen to Düsseldorf via Moers [(5.8a) and (5.8b) are not synonymous]
c. Floyd left Nijmegen. He passed through Moers and reached Düsseldorf in 90 minutes [underspecified]

---

**MACRO-EVENT SYNTHESIS (CONT.)**

- a working definition

**Macro-event synthesis** is a cognitive process by which subevent representations are merged into an overarching temporal Gestalt in such a fashion as to make the Gestalt - the macro-event - accessible to temporal modification while rendering the subevents inaccessible to temporal modification.

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at a low level, the typology of motion integration boils down to crosslinguistic differences
- in how much path information can be incorporated in a single macro-event expression
- which in many languages, though not in all, means in a single clause

Figure 1. The three segmentation types (Bohnemeyer et al. 2007: 517)

- at a higher level, the typology is evidence of crosslinguistic differences in the scope of the application
  - of the operation of macro-event synthesis
  - Bohnemeyer et al. (2010) extend this to causal chains
  - in a small study comparing speakers of Ewe, Japanese, Lao, and Yucatec
    - Japanese speakers emerged as differing from the speakers of the other languages
      - in that they dispreferred the use of single macro-event descriptions for causal chains
      - whose causers are not prototypical agents

what remains very much an open question is
- whether these linguistic differences are accompanied by any difference in nonverbal cognition
- to my knowledge, this has not been empirically tested

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SUMMARY

- the macro-event property is a property of construction that blocks temporal modifiers from accessing subevents
- it was first postulated in Bohnemeyer et al. (2007)
- in a bid to operationalize the typology of constructions that represent a scene as a “single event”

SUMMARY (CONT.)

- in the motion domain, the ability to integrate atomic location change events into molecular multi-ground motion events
  - correlates with two typological properties:
    - the extent to which path information is expressed outside the verb root
    - the availability of serialization constructions
      - that combine multiple location change VPs into a single motion macro-event description

SUMMARY (CONT.)

- syntactically, macro-event constructions consist, in Role & Reference Grammar terms,
  - either of a single verbal core
  - or of two or more cores joined in cosubordinate nexus
- cosubordination involves the fusion of daughter cores into a single mother core
  - in such a fashion that operator projects and peripheries are shared
  - this can be seen as the syntactic mechanism that blocks access of modifiers and operators to subevents

SUMMARY (CONT.)

- only certain types of interclausal relations are eligible for macro-event encoding
  - these are interclausal relations that necessarily involve overlapping or contiguous subevents
cognitively, the macro-event property is the result of a bounding operation
- that imposes a temporal Gestalt on a scene
- it is an operation that falls under the Synthesis level
- of Talmy’s (2000) typology of attention distribution mechanisms in grammar

the macro-event property is a construction meaning
- that cannot generally be compositionally derived from the meanings of the constituents alone
- although semantic anomaly as the result of a type mismatch can account for the simplest cases
- it can be viewed as the grammaticalization
- of the distinction between time-dependent and time-independent interclausal relations

it remains an open question
- whether the linguistic distinction between macro-event expressions and non-macro-event expressions
- correlates with differences in non-verbal cognition
- in particular, do speakers of languages that lack macro-event expressions for a given type of scene/scenario
- conceptualize and mentally process this type of scene as more loosely integrated
- compared to speakers of languages that afford frequent macro-event encoding of that scene type?

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