

Motion Event Segmentation

An Analysis of Jaminjung

Dorothea Hoffmann (University of Manchester)

Outline

1. Theory

- Event Segmentation
- The Macro-Event Property (MEP)
- Classification of Languages
- Semantic Principles Sensitive to the MEP

2. Event Segmentation in Jaminjung

- Brief general remarks on Jaminjung
- Motion events in Jaminjung
- Classification of Jaminjung using the MEP

3. Conclusions

Theory

- Bohnemeyer et al. 2007. Principles of Event Segmentation in Language: The Case of Motion Events. *Language* 83:495-532.
- Towards semantic typology of motion-event segmentation
- Information about event is usually not mapped into a single lexical item, but distributed across phrases, clauses and larger chunks of discourse
- → event segmentation is “the distribution of information about an event across the parts of an utterance” (496)

Theory

- previous research: adopting syntactic units (Pawley 1987) or intonational units as criteria for cross-linguistic variation
- argument: correlation between syntactic or intonational units and semantic/conceptual event representations is language specific
- Language constraints derive partly from 'lexicalisation patterns' as proposed in Talmy (1985, 2000)
- and partly from availability of syntactic constructions with certain properties (e.g. Beavers et al, 2008)

How to measure event segmentation?

- Proposed starting point: Macro-Event-Property (MEP)

Typological Background

- Proposed Starting point for Event Segmentation:
- **Macro Event Property:** comparable constructions in individual languages to package information about an event
- a construction has the MEP if temporal operations such as time adverbials, temporal clauses, and tenses necessarily have scope over all subevents encoded
- “That is, an expression has the MEP iff any time-positional operator denoted by a time-positional adverbial, temporal clause, or tense that ‘locates’ a subevent entailed by the expression in time also locates all other subevents in time.”

(Bohnemeyer et al., 2007)

Theory

Examples having the MEP:

- Cause and effect presented as single event:
 - 1) *The vase was broken by Sally.*
- Resultative construction:
 - 2) *Floyd instantly pushed the door shut.*
- Encoded motion along a path determined by source, goal and route:
 - 3) *Floyd went from Rochester via Batavia to Buffalo.*

Examples lacking the MEP

- Cause and effect presented as sequence of 2 events:
 - 4) *Sally knocked over the vase and it broke.*
- Individuation of subevents of departure, passing and arrival:
 - 5) *Floyd left Rochester, passed through Batavia, and arrived in Buffalo.*

Theory

- Study focuses on encoding information about the (change of) location of a moving figure with respect to some referential ground
 - The **Figure** is a moving or conceptually moveable object whose path or site is at issue
 - The **Ground** is a reference frame or a reference object stationary within a reference frame with respect to which the Figure's path or site is characterised
- within some frame of reference (FoR)
 - **Intrinsic** (intrinsic facets of the ground determine FoR – object-centred), **relative** (viewer-centred), and **absolute** (fixed bearings) FoR

(Talmy, 2000)

(Levinson, 1996, 2003)

Path type	Path function	Corresponding Subevent	Examples
Bounded paths	FROM (source)	Departure	<i>From the entrance, off the roof, out of the kitchen</i>
	TO (goal)	Arrival	<i>To the entrance, onto the roof, into the kitchen</i>
Routes	VIA (route)	Passing	<i>Past the entrance, across/over the roof, through the kitchen</i>
Directions	TOWARD, AWAY-FROM	Any phase of motion oriented in a frame of reference	<i>Towards the entrance, north(bound), down, upriver, left(ward)</i>

(Jackendoff, 1983)

Theory

Segmentation of location-change sequences:

- Three types of languages on the basis of how many and what kinds of subevent representations they can integrate into the denotation of a macro-event construction
- Sample of 18 languages (including Indo-European, Austronesian, Papuan, Mayan and isolates)

Type I Languages

Possible to integrate subevents of **departure**, **arrival** and **passing** of an intermediate route ground into a single macro-event expression:

6) *Floyd went **from Nijmegen** **across the river** **to Elst**.*

- Such languages are

- either satellite-framed in Talmy's distinction and thus permit multiple path phrases in a single verb phrase,
- or they have multiverb-constructions that string multiple location-change denoting VPs together to form macro-event expressions encoding both departure and arrival

Type I Languages

Two types of Macro-Event expressions:

1. **durational and time-positional adverbials** with simple uncoordinated monoclausal representations have scope over all three subevents of departure, arrival and passing (English) and all **subevents** can be combined in a single **VP** (Tiriyó)

English:

- 7) *The circle rolled from the square past the house-shaped object to the triangle **in just 30 seconds**.*

Tiriyó (Carib, Brazil):

- 8) *Kau wewe-pisi **enee-ja-n** **wewe-pæ** **æma-tae**
cow wood-dim bring-pres-evid wood-from path-along
kanawa-pona
vehicle-toward*

‘The cow is bringing the little stick from the tree along the path to the vehicle’

Type I Languages

2. Combination of **departure-**, **passing-** and **arrival-denoting** VPs in multiverb constructions to form a single clause

Lao (Tai-Kadai, Laos):

9) *Man lèèn* (*qòòk*) *caak hùan* *taam* *thaang*

[3 run exit from house]_{VP} [follow path]_{VP}

hòòt *kòòn-hiin*

[reach CL-rock]_{VP}

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

- Monoclausal and having the MEP

Other languages: Ewe (Kwa, Ghana), Lao (Tai-Kadai, Laos), Marquesan (Austronesian, Marquesas), and Dutch

Type II Languages

- use macro-event expressions encoding both **departure** and **arrival**,
 - but commonly, though not necessarily, require a second macro-event expression for the integration of **passing** subevents.

10) *Floyd went from Nijmegen to Elst, crossing the river.*

- Such languages employ a double-marking strategy for the encoding of path functions (expressing path in verb roots - verb-framed - but simultaneously marking them in the ground phrase)
- Integrating passing subevents depends on two factors:
 - Possible to express route-path function in ground phrase without a route-denoting verb? (Yes in Basque, marginally in Hindi, no in Japanese)
 - Is the route coextensive with the path - contiguous to source and goal? (if yes: combination of source and goal phrases with route-denoting verb – Japanese, or refer to route with general instrumental phrase – Hindi)

Type II Languages

- Example from Japanese

11) (*San-ji-ni*)

three-o'clock-DAT

(*yo-ji-ni*)

four-o'clock-DAT

(*go-ji-no*)

five-o'clock-DAT

ki-no

tree-GEN

kawa-o

river-ACC

ie-ni

house-DAT

tokoro-o

place-ACC

watat-te´,

cross-CON

tsui-ta

arrive-PAST

shuppatsu-shi-te,

departure-do-CON

‘Leaving the tree (at three), crossing the river (at four), [one] arrived at the house (at five).’

- Single-clause construction used to express **departure** and **arrival** must be broken up into a main clause and a ‘converb’ clause (English gerund) headed by **wataru** – ‘cross’ to integrate a **passing** event → subordinate clause lacks the MEP
- Other languages: Arrernte (Australian, Australia), Basque (Isolate, Spain), Hindi (Indo-European, India), Trumai (Isolate, Brazil)

Type II Languages

- Integration of passing event through expression of route-path functions in ground phrases without presence of a route-denoting verb:

- Basque:

12) *Arrassate-tik* *Oinati-ra* *joan*
Arrasate-ABL Oñati-ALL go.PERF
zen *mendi-an* *zehar*
AUX.3SG mountain-LOC through
'(S)he went from Arrasate to Oñati across (over) the mountains.'

- Has the MEP – **crossing subevent** cannot be singled out for timing

Type II Languages

- Route is coextensive with the path

- Hindi:

13) *kutta* *mããs=ko* *nadii=se* *peR* *tak us*
dog.NOM meat=ACC creek=ABL tree until that
raaste=se *le gayaa*
route=INST take go.SG.M.PERF

‘The dog took the meat from the creek to the tree along the road.’

- Single-clause description comprising **departure**, **passing** and **arrival**
- Route path = encoded by oblique phrase in instrumental case → possible because route is coextensive with entire path from source to goal (no additional location-change-subevent)

Type III Languages

- The languages
 - require a separate VP for encoding each location-change subevent that involves a distinct ground
 - are verb-framed languages lacking the kind of double-marking of path relations as e.g. found in Basque, Japanese or Hindi
 - express location change exclusively in verb roots or stems and at the same time lack multiverb constructions that combine multiple location-change denoting VPs into a single MEP construction

Type III Languages

- Example from Jalonke (Guinea, Niger-Congo):

15) A *keli wuri-n'ii'*, a *sigā (haa) gεmε-n ii.'*
3SG leave tree-DEF.LOC 3SG go until rock-DEF.LOC
“He left the tree (and) went as far as the rock.”

- example illustrates tell-tale path-neutral ground phrases that are key to type III framing
- Both the **source ground** (tree) and the **goal ground** (rock) are referred to by postpositional phrases headed by the same generic locative postposition *i*.
- Other languages: Kilivila (Austronesian, Papua New Guinea), Saliba (Austronesian, Papua New Guinea), Tidore (West Papuan, Indonesia), Tzeltal (Mayan, Mexico), Yêlî Dnye (East Papuan, Papua New Guinea), Yukatek (Mayan, Mexico), Zapotec (Oto-Manguean, Mexico)

Typological Background

- Which type a language falls under is largely a matter of interplay of 2 factors:
- (1) **lexicalisation** – expression of path or location-change functions in verbs, satellites, or ground phrases or both (Talmy 1985, 2000)
- (2) availability of certain **morphosyntactic constructions** (such as multiverb-constructions and double-marking strategy) (Beavers et al 2008)



Jaminjung

- spoken in Victoria River Area of Northern Australia
- non-Pama-Nyungan
- approximately 100 speakers remaining (not acquired by children)
- first language and language of daily interaction = Kriol (English-based Creole language)
- code-switching and borrowing very common even when traditional languages are spoken

Grammatical Features of Jaminjung

- Existence of 2 distinct predicative word classes:
- **Verbs:**
 - closed class of around 30 lexemes carrying verbal inflection
 - encode only fact of motion and ‘anchoring’ of path
- **Coverbs:**
 - Open class of uninflected elements (cover semantic areas usually covered by verbs (and adverbs and adpositions) in other languages
 - express both manner of motion and other aspects of path
- → clear division of labour with respect to expression of spatial relations and components of motion events

Jaminjung and the Talmy-Typology

- Jaminjung falls outside Talmy's verb-framed/satellite-framed division
 - Careful definition of 'verbs' and 'satellites' – distinguishing between 'main verb status' (verbs) and 'open class membership' (coverbs) as defining criteria necessary

16) *burduj* *ga-jga-ny,* *jalalang* *miri*
go.upwards 3sg-GO-PST hang leg
'(the boy) has climbed up, his legs hanging down'
(Schultze-Berndt, 2007)

- Manner and path expressed by **coverbs** and **verbs** respectively, but are coverbs satellites or verbs?

Jaminjung and the Talmy-Typology

- Jaminjung also does not fit Slobin's (2006) category of equipollently-framed languages (framing in which both path and manner have roughly equal morphosyntactic status)

17) *jalig-malang yugung walig ga-jga-ny=nu,*
child-GIVEN run go.around 3sg-GO-PST=3sg.OB
'the child ran around for him' (to pick up the dog after its fall from the window')

(Schultze-Berndt 2007)

- Both **coverbs** of manner and path or position can be combined in a single intonation unit with a single **verb**
- In this respect, Jaminjung has characteristics of an equipollently-framed language
- however, small corpus search by Schultze-Berndt (2007) showed that manner is only expressed if manner information is foregrounded in discourse (no stylistically marked structure)

Jaminjung and the Talmy-Typology

- Verbs in Jaminjung do not encode manner information and path information only in a very limited nature (restricted to motion ‘as such’ (Schultze-Berndt, 2007))

18) *jid* *ga-rdba-ny* *warrangan-ngunyi* *thamirri* *gulban-bina*
go.down 3sg-FALL-PST cliff-ABL down ground-ALL
‘he went down from the cliff down to the ground’

- Verb –*irdba*, specification of **source**, the **goal**, the **absolute direction**, and the **path**

19) *bayirr* *nganth-ardgiya-ny=bina* *langiny-bina* *na*
supported 2sg:3sg-THROW-PST=now wood-ALL now
‘you threw it over the branch now’

- In addition to **verb** and **allative** phrase (goal), there is a **positional coverb** indicating the spatial configuration that the moving figure assumes at goal location (Schultze-Bernd, 2006)

Event Segmentation in Jaminjung

Classification of Jaminjung using the MEP:

- Only possible to make assumptions as data is very scarce for the motion events of goal, source and passing at the same time:
- Assumption: Jaminjung belongs to **Type II**
 - ME expressions used to encode departure and arrival, but not necessarily passing event
 - double-marking strategy for encoding path functions as possible further distinction from Type I languages

Event Segmentation in Jaminjung

- 20) *langiny yina-ngunyi=biyang burrantham* xx
wood DIST-ABL=NOW 3pl:3sg-BRING-PRS
ngiyi-bina
PROX-ALL
'from those trees they bring it ?? here'

(ES97_A03_01.145)

- ME expression used to encode both subevents of **departure** (source) and **arrival** (goal) – time encoded in tense marker of verb
- Double-marking strategy:
 - Path and fact of motion only encoded in (main) verb roots (*burrantham* – 3pl:3sg-BRING-PRS) **and**
 - simultaneously marked in the ground phrase (*langiny yina-ngunyi=biyang* – wood DIST-ABL=NOW)

Event Segmentation in Jaminjung

21) *thawaya yirra-gba* *Jalyarri=biyang* *burl*
eat 1PL.EXCL-BE.PST Subsection=now emerge
ga-ruma-ny, *marraj ga-jga-ny*
3sg-COME.PST past 3sg-GO.PST
'we were eating, then Jalyarri appeared, (and) went past'
(Schultze-Berndt 2007)

- Subevents of **emerging** and **passing** are **intonationally** separated and there are two inflecting verbs (encoding only the fact of motion and both combined with a coverb each encoding the manner of motion) for both subevents of **emerging** (*burl ga-ruma-ny*) and **passing** (*marraj ga-jga-ny*)
- Time operator (*biyang*) seems to have scope subevent of **emerging** but not over the **passing** one

Event Segmentation in Jaminjung

22) *Timber Creek ngunyi biya yurrurumany,*

placename ABL 1PI.GO.PST

...marraj=ung.. yurrijga:ny, Gregory bina

go.past 1.PL.INCL.PST placename ALL

‘we came from Timber Creek, we went past, to Gregory’

(ES95_A20_routedescrip)

- **Source** and **goal** subevents are separated from the **passing** event here by an **intonational break**
- The two subevents of source and goal are both encoded by the same verb and the passing subevent is encoded by a coverb and a verb

Event Segmentation in Jaminjung

- further characteristic of Type II languages in order to integrate a passing event into the macro-event expression: the route is coextensive with the path, that is, contiguous to source and goal
- It is then possible to combine **source** and **goal** phrases with a **route-denoting verb** :

23) *jid* *ga-rdba-ny* *warrangan-ngunyi*
 go.down 3sg-FALL-PST cliff-ABL
 thamirri gulban-bina
 down ground-ALL
 ‘he went down from the cliff down to the ground’

- The motion verb *gardbany* (in connection with the **manner-and-path denoting coverb** *jid* as well as the directional *thamirri*) is a route-denoting verb that here combines **source** and **goal** phrases and thus an integration of all three subevents of departing, arriving and passing can be integrated into a single clause

Conclusions for Jaminjung

- Indication that Jaminjung is belongs to type II languages in Bohnemeyer et al.'s typology
- Scarce data for expressing particular motion events of emerging, passing and arriving using a time operator → rather artificial constructions
- Elicitation of direction-giving needed to collect more data
- Jaminjung's use of verbs and coverbs to mark path and manner shows the need to explicitly define
 - “double-marking”: source and goal are marked in the verb as well as in the ground denoting phrase – in Jaminjung, marking of path is often (additionally) expressed in coverbs not verbs and
 - “multiverb constructions”: Do these include only inflecting verbs or can Jaminjung's coverbs be included in the definition of verb here?

Conclusions

- Problematic explanation for relationship between MEP and syntax
 - as MEP seems to be bound to the VP, but there are language-specific differences concerning the existence of a VP
 - – it is possible to encode motion information in other parts of the syntax such as associated motion, NPs etc.
- Not clearly defined language types - terms such as double-marking or multiverb-phrases are not defined precisely enough to be applied to all languages (type II languages seem to lack clear distinction from type I languages)
- Examples from languages seem highly artificial at times and only applicable in the restricted domain of direction-giving
- More data needs to be obtained from both Jaminjung and Kriol possibly with specifically designed tools/questions etc.

References

- Bohnemeyer, Juergen, Enfield, Nicholas J., Essegbey, James, Ibarretxe-Antunano, Iraide, Kita, Sotaro, Luepke, Friederike, and Ameka, Felix Kofi. 2007. Principles of Event Segmentation in Language: The case of Motion Events. *Language* 83:495-532.
- Beavers, John, Levin, Beth, Tham, Shiao-Wei. 2008. The Typology of Motion Expressions Revisited. The University of Stanford. Unpublished draft
- Jackendoff, R. 1983. *Semantics and Cognition: Current studies in Linguistics*. Cambridge, MA: MIT Press.
- Levinson, Stephen C. 2003. *Space in Language and Cognition. Explorations in Cognitive Diversity*. Cambridge: Cambridge University Press.
- Meakins, Felicity. 2007. Case-Marking in Contact: the Development and Function of Case Morphology in Gurundji Kriol, an Australian Mixed Language., Department of Linguistics and Applied Linguistics, University of Melbourne.
- Sandefur, John. 1986. *Kriol of North Australia: A language Coming of Age*. vol. 10: Work Papers of SIK-AAB. Series A. Darwin: Summer Institute of Linguistics.
- Schultze-Berndt, Eva. 2006. Sketch of a Jaminjung Grammar of Space. In *Grammars of Space*, eds. Stephen C. Levinson and David P. Wilkins, 63-113. Cambridge: Cambridge University Press.
- Schultze-Berndt, Eva. 2007. On manners and paths of refining Talmy's typology of motion events via language documentation. In *Proceedings of the Conference on Language Documentation and Linguistic Theory, 7-8 Dec. 2007*, eds. P.K. Austin, Bond O. and D. Nathan, 223-233. London: SOAS.
- Slobin, Dan I. 2006. What makes manner of motion salient? Explorations in linguistic typology, discourse and cognition. In *Space in Languages. Linguistic Systems and Cognitive Categories*, eds. Maya Hickmann and Stephane Robert, 59-81. Amsterdam, Philadelphia: John Benjamins.
- Talmy, Leonard. 1985. Lexicalization patterns: semantic structure in lexical forms. In *Language Typology and Syntactic Description: Grammatical Categories and the Lexicon`*, ed. Shopen, 57-149. Cambridge: Cambridge University Press.
- Talmy, Leonard. 2000. *Toward a cognitive semantics. Typology and Process in Concept Structuring* vol. 2. Cambridge, MA: MIT Press.