The macro-event property and the LSC

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1

Overview

- the macro-event property
- the MEP and the LSC
- single-core constructions
- multi-core constructions
  - English: infinitival complements
  - Ewe: serial verb constructions
  - Japanese: converb constructions
- summary and discussion

2

The macro-event property

- typologists and their intuitions about events

"(…) true SVC structures and covert coordination structures seem to feel different to native speakers. The covert coordination **tends to be perceived as a sequence of distinct events, whereas the SVC is perceived as a single event** (…)" (Baker 1989: 547; emphasis JB&RDVV)

"An SVC consists of more than one verb, but **the SVC is conceived of as describing a single action**." (Dixon 2006: 339; emphasis JB&RDVV)

"Although two or more verbs are present, **the sentence is interpreted as referring to a single action rather than a series of related actions**. Although the action may involve several different motions there is no possibility of a temporal break between these and they cannot be performed, for example, with different purposes in mind." (Sebba 1987: 112; emphasis JB&RDVV)

  - but what *is* a "single action/event"?
    - and how do we know that a linguistic expression is a description of a "single action/event"?

3

what defines a "single" event?

objects -- domain: **space** events -- domain: **time**

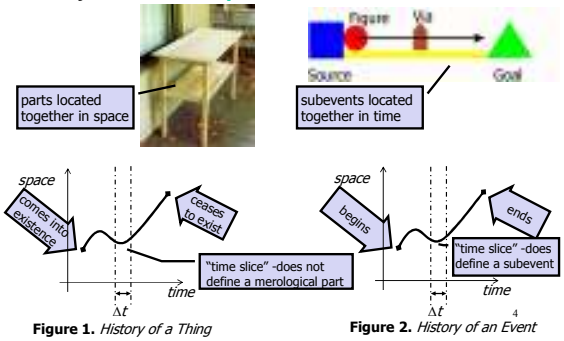

Figure 1. *History of a Thing* **Figure 2.** *History of an Event*

4

  - the problem of upper bounds in mereology
    - in the object domain: shape permanence and "common fate"
      - the legs are part of the table
      - the table is part of the kitchen furniture – but that's not the same sense of "part"
        - » I can move part of the kitchen furniture, leaving the rest behind – and that rest can still be referred to as *kitchen furniture*
    - in the event domain: ???
      - e.g., this talk is a part of the 2009 RRG Conference
        - » which in turn is *sort of* a part of the 2009 Linguistics Institute
        - » and it's a part of our lives; your life; the history of the universe…
      - the events in (1.1) can always be understood as part of the same "journey"

(1.1) a. *Floyd left Nijmegen. He passed through Utrecht and then reached Amsterdam*
b. *Floyd went from Nijmegen to Amsterdam, passing through Utrecht on the way*
c. *Floyd went from Nijmegen to Amsterdam via Utrecht*

5

- cf. Casati & Varzi 1999 on mereology

- we could use the "describability" of the event by particular constructions as a criterion
  - but that would render the above quotes circular
    - since it is precisely constructions of event descriptions that are supposed to be distinguished here
- wanted: a measure of event segmentation
  - that is sensitive to the syntax of event-denoting constructions
  - but applicable across languages regardless of construction type

6

The macro-event property (Cont.)

- the solution: the **Macro-Event Property**
  - a property of construction types
    - that assesses the semantic event representations a construction type can encode
    - on the basis of its compatibility with those expressions
      - that are directly sensitive to the "ontological" properties of event representations
      - i.e., *temporal* expressions – expressions of location in time, duration, and boundaries in time
    - the MEP applies to constructions that package the parts of an event so tightly
      - as to not permit individual access by temporal expressions (adverbials, temporal clauses, tenses)

(1.2)a. *Floyd left Nijmegen **at eight**. He passed through Utrecht **at nine** and reached Amsterdam **at ten**.* [-MEP]

b. **Floyd went from Nijmegen **at eight** to Amsterdam **at ten** via Utrecht **at nine**.* [+MEP]

c. ***In the morning**, Floyd went from Nijmegen to Amsterdam via Utrecht.* [+MEP]

The macro-event property (Cont.)

(1.3) **Macro-Event Property (MEP) (Informal definition)**: An event-denoting construction has the MEP iff it combines only with those time-positional or durational modifiers that have scope over all subevents it entails.

(1.4) **Denotation of time-positional modifiers**: AT := $\lambda P_{\langle v,t\rangle}\lambda e.\ P(e)\ \&\ \tau(e)\subseteq t$

The variable t ranges over time intervals and $\tau(e)$ is a 'temporal trace' function that returns the 'run time' of event e. AT maps an event e that falls under a predicate P into a time t which contains the run time of e. The value of t may be determined by some other event description (*after breakfast*; *during Floyd's visit to Nijmegen*; *as she was heading down the driveway*) or through specification of a calendrical time interval (*in the morning*; *on Monday*; *at 3pm*).

(1.5) **Macro-Event Property (MEP) (Formal definition, for time-positional modifiers only)**: Let expression C denote an event predicate P. Let T_{POS} be any modifier of C ($[\ldots T_{POS}\ldots]_C$) which locates some subevent $e'\leq_E e$ at time t ($T_{POS} \Rightarrow \lambda Q_{\langle v,t\rangle}\lambda e[Q(e') \wedge \tau(e')\subseteq t]$, where Q may or may not be identical to P). Then C has the macro-event property (MEP) iff any syntactically and semantically acceptable T_{POS} necessarily also locates e at t (i.e., $AT(Q,e',t) \rightarrow AT(P,e,t)$ for any acceptable T_{POS}).

8

The Macro-Event property (Cont.)

- caveat
  - the MEP is a mapping property of constructions
    - not a semantic property
    - no ontological category of "macro-event" is assumed
- typological research applying the MEP
  - the MEP serves as a heuristic
    - to study the segmentation of motion events across languages
      - Bohnemeyer 2003; Bohnemeyer *et al.* 2007
    - to study the segmentation of causal chains across languages (Bohnemeyer *et al.* in press)
  - the goal
    - measure the crosslinguistic variation
      - in what kinds of motion events can be encoded by constructions that have the MEP

9

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10

The MEP and the LSC

- is there a "macro-event phrase"?
  - i.e., is there a construction or syntactic unit that is associated w/ the MEP across languages?
- we show below that neither (simple) clauses nor (simple) VPs are "macro-event phrases"
- the hypothesis we wish to explore here

(2.1) **Core-MEP Hypothesis:** Across languages,
i.single-core constructions necessarily have the MEP
ii.multi-core constructions generally have the MEP only if their cores are in cosubordination and lack the MEP otherwise

The MEP and the LSC (cont.)

- the intuition behind this idea
  - simple cores are the right size for the MEP
    - nuclei are too small to be tested for the MEP since their peripheries do not host time-positional modifiers
    - clauses are too large since they may contain multiple cores
  - simple cores are the right stuff for the MEP
    - cores are constituted by the expressions of the elements of eventuality descriptions – predicates and arguments
    - unlike simple VPs, simple cores cannot contain multiple independent eventuality descriptions
  - the complexity of eventuality descriptions that can be expressed in cores is constrained

The MEP and the LSC (cont.)

- the program for this presentation
  - single-core constructions
    - show that simple cores, unlike simple VPs, must have the MEP
      - drawing on data from English event nominalizations
  - multi-core constructions
    - show that multi-core constructions generally lack the MEP
    - examine an important class of exceptions: core cosubordinations
      - drawing on data from
        - » English complementation constructions
        - » Ewe serial verb constructions
        - » Japanese converb constructions

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14

Single-core constructions

- the Core-MEP Hypothesis predicts that single-core expressions cannot lack the MEP
- e.g., single-core expressions do not accept multiple independent time-positional modifiers

(3.1) *Floyd left Buffalo (at 8:00). He arrived in Rochester (at 9:15)*

(3.2) a. *Floyd went from Buffalo (?at 8:00) to Rochester (?at 9:15)*

b. *Floyd went from Buffalo to Rochester (in the morning)*

- multiple independent time-positional modifiers in the periphery of single cores are disallowed
  - it is conceivable that this constraint may be a special case of a more general principle
    - see the discussion at the end of this paper

Single-core constructions (cont.)

- however, this constraint does not necessarily hold for simple verb phrases (in English)

(3.3) *Floyd complained from his departure in Buffalo (at 8:00) to his arrival in Rochester (at 9:15)*

  - (3.3) contains only a single VP
  - the event nominalizations *departure* and *arrival* do not project VPs – but they do project nominal cores
    - compare Figures 3-4 below
    - cf. Nunes 1993 and Van Valin & LaPolla (1997: 55-56, 186-189) on the similarities b/w verbal and nominal cores
- the smallest unit that can be in the scope of a time-positional modifier is a core, not a VP

16

Single-core constructions (cont.)

- VP with non-sentential periphery ⇒ [+MEP]

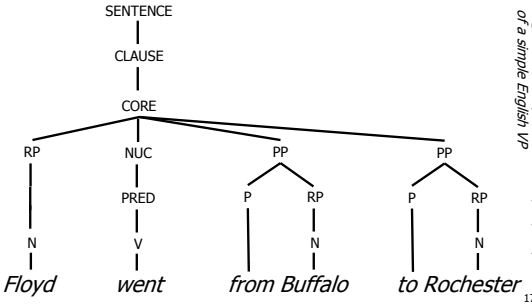

Figure 3. *Path phrases in the periphery of a simple English VP*

17

Single-core constructions (cont.)

- VP with event nominalizations ⇒ [- MEP]

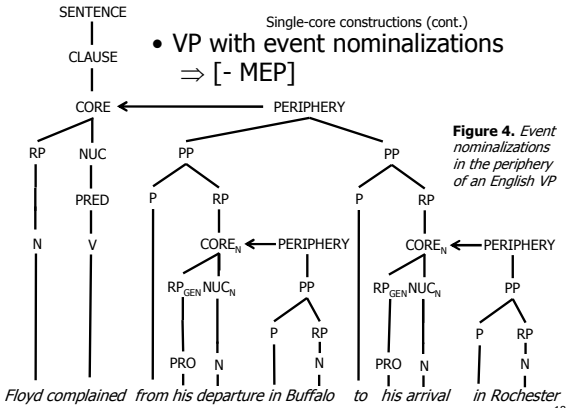

Figure 4. *Event nominalizations in the periphery of an English VP*

18

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19

Multi-core constructions

- constructions that comprise multiple cores generally lack the MEP
  - consider (4.1)-(4.2), featuring an event nominalization and a clause as core arguments

(4.1) *Floyd's behavior at the party on Monday still angered Sally three days later*

(4.2) *That Floyd kissed Harriet at the party on Monday still angered Sally three days later*

- in such structures, each core introduces its own periphery
  - which may host independent time-positional modifiers

Multi-core constructions (cont.)

- event nominalization as core argument
  ⇒ [- MEP]

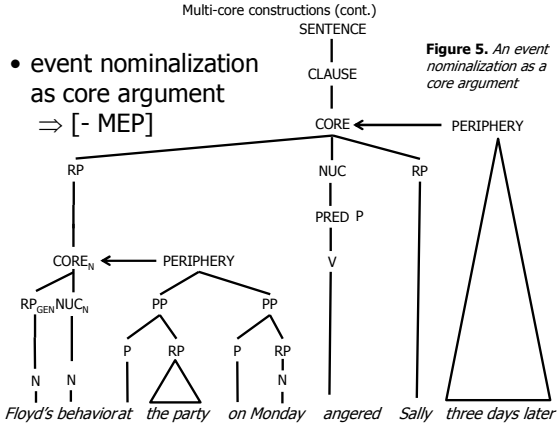

Figure 5. *An event nominalization as a core argument*

Multi-core constructions (cont.)

- however, there is an important exception
  - across languages, core cosubordinations appear to have the MEP

(4.3) **Preservation-under-cosubordination Hypothesis:** Core cosubordination preserves the MEP.

- in the following, we present supporting evidence for (4.3) from
  - English infinitival complement constructions
  - Ewe serial verb constructions
  - Japanese converb constructions
- a question for future research
  - does cosubordination necessarily involve a single shared periphery?
    - is that what's responsible for (4.3)?

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23

English: infinitival complements

- core coordination under a clause node
  ⇒ [- MEP]

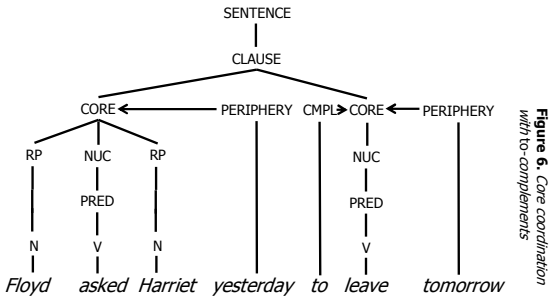

Figure 6. *Core coordination with* to*-complements*

English: infinitival complements (cont.)

- core cosubordination under a core node ⇒ [+ MEP]

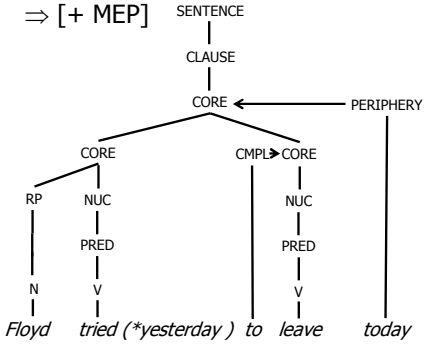

Figure 7. *Core cosubordination with* to*-complements*

English: infinitival complements (cont.)

- the evidence for coordination in Figure 6 vs. cosubordination in Figure 7
  - modal operators are shared in Figure 6, but not in Figure 7
    - cf. Van Valin & LaPolla 1997: 442-469; Van Valin 2005: 188-205

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27

Ewe: serial verb constructions

- the two types of serial verb constructions of Ewe illustrated below are both mono-clausal
  - yet the first has the MEP, the second does not

(6.1) *Circle lá mli tsó blutɔ gbɔ́ le mɔ́-a dzí*
[circle DEF roll from blue place LOC road-DEF on
le ga enyí me vá tó xɔ-a ŋú le ga asiéke me
at.eight] [VEN pass house-DEF skin **at.nine]**
hé vá ɖó triangle lá gbɔ́ le ga ewó me.
[ITI VEN arrive triangle DEF place **at.ten]**
[-MEP]
'The circle rolls from the blue one on the road at eight, passing the house at nine, arriving at the triangle at ten.'

(6.2) **Circle lá mli tsó blutɔ gbɔ́ le mɔ́-a dzí*
[circle DEF roll from blue place LOC road-DEF on
le ga enyí me tó xɔ-a ŋú le ga asiéke me
at.eight] [pass house-DEF skin **at.nine]**
yi dé triangle lá gbɔ́ ***le ga ewó me.***
[+MEP]
[go ALL triangle DEF place **at.ten]**
intended: 'The circle rolls from the blue one on the road at eight, passing the house at nine, arriving at the triangle at ten.'

Ewe: serial verb constructions (cont.)

- core coordination under a clause node ⇒ [-MEP]

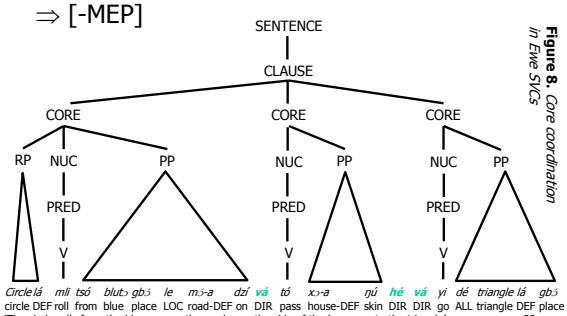

Figure 8. *Core coordination in Ewe SVCs*

29

Ewe: serial verb constructions (cont.)

- core cosubordination under a core node ⇒ [+MEP]

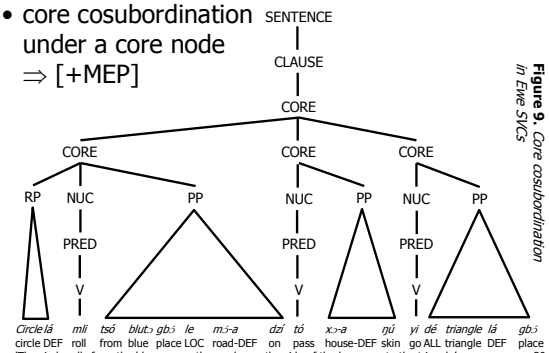

Figure 9. *Core cosubordination in Ewe SVCs*

30

Ewe: serial verb constructions (cont.)

- the two structures differ in that the one in Figure 8 requires directional particles in the cores
- evidence for the single clause node in Figures 8-9 comes from negation
  - the verbal projections cannot be negated independently of one another (cf. Bohnemeyer *et al.* 2007: 500-501)
- the placement of the PPs makes a nuclear juncture analysis of either construction look implausible
- by hypothesis, cosubordination is responsible for the structure in Figure 9 having the MEP

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32

Japanese: converb constructions

- *-te* converbs occur in nuclear, core, and clause junctures (Hasegawa 1996)
  - core junctures with *-te* have the MEP
    - examples from Bohnemeyer *et al.* (in press)

(7.1) Onna-no hito-ga osara-o teeburu-ni tataki+tsuke-te
JPN female-GEN person-NOM dish-ACC table-LOC hit+attach-CON
[+MEP] (*go-fun-go-ni) wat-ta
five-minute-later-LOC break-PAST
'The woman broke the dish (*five minutes later [i.e., after smashing it]) by smashing it against the table'

(7.2) Onna-no hito-ga hanmaa-oo toshi-te
JPN female-GEN person-NOM hammer-ACC drop-CON
[+MEP] (*go+fun+go-ni) sara-o wat-ta.
five+minute+later-LOC dish-ACC break-PAST
'The woman broke the dish (*five minutes later [i.e., after dropping the hammer]) by dropping a hammer'

33

Japanese: converb constructions (cont.)

- in contrast, clause-level junctures with *-te* lack the MEP

(7.3) Sono onna-no hito-ga Tokyo-ni tsui-te
JPN that female-GEN person-NOM Tokyo-LOC arrive-CON
[-MEP] itsuka-go-ni ookina jishin-ga oki-ta
five.days-after-LOC big earthquake-NOM happen-PAST
'A big earthquake happened five days after the woman arrived at Tokyo' (Sotaro Kita p.c.)

34

Japanese: converb constructions (cont.)

- clausal cosubordination ⇒ [-MEP]
  - clausal junctures with *–te* must be cosubordinations
    - cf. Hasegawa (1996: 176-210)

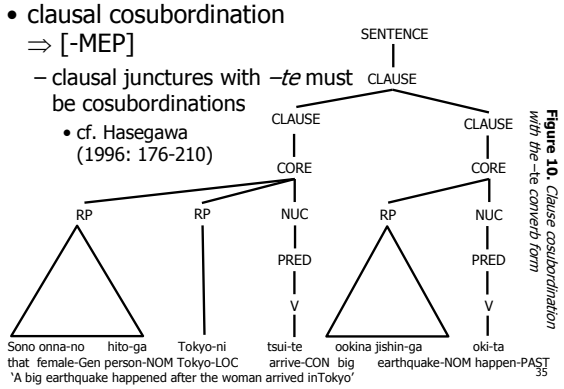

Figure 10. *Clause cosubordination with the –te converb form*

35

Japanese: converb constructions (cont.)

- core cosubordination ⇒ [+MEP]
  - the evidence against coordination comes again from modal operators

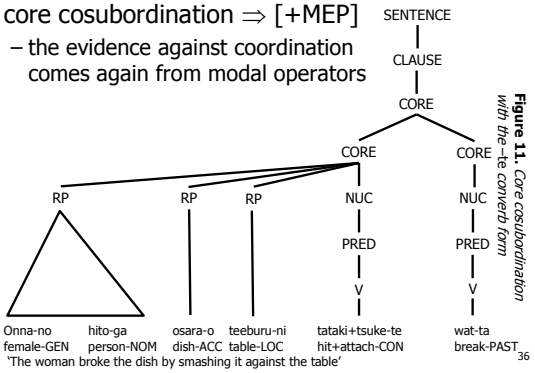

Figure 11. *Core cosubordination with the –te converb form*

36

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37

Summary and discussion

- simple cores are "macro-event phrases"
  - they appear to be universally associated with the macro-event property (MEP) – unlike verb phrases
- why should this be the case?
  - cores are the smallest unit that can be tested for the MEP
    - since they, but not their nuclei, license the kind of periphery that accommodates time-positional modifiers
  - cores are the smallest syntactic unit that can host a syntactically complete eventuality description
    - they are constituted by the expressions of predicates and their arguments
      - and therefore are sensitive to interface mapping properties in a way that VPs are not

38

Summary and discussion (cont.)

  - the complexity of the eventuality descriptions that can be expressed in simple cores is constrained
    - Bohnemeyer *et al.* 2007 show that macro-event expressions are subject to a set of interface constraints
      - including the well-known biuniqueness constraint on linking (Fillmore 1968; Bresnan 1980; Chomsky 1981)
        - » uniqueness of thematic roles in turn has been argued to be an event individuation crition
        - » two agent/theme/goal roles => two macro-event representations (Carlson 1998)
    - future research will have to examine to what extent these constraints apply to cores in general
    - the restriction to a single independent time-positional modifier per core may prove a special case of these

39

Summary and discussion (cont.)

- complex cores and multi-core constructions generally lack the MEP
  - an intriguing exception across languages appear to be core cosubordinations
    - this construction may owe its special status vis-à-vis the MEP to cosubordinate cores sharing a periphery
      - this remains to be investigated
- a philosophical implication
  - mainstream Generative Grammar assumes
    - that the units of syntactic structure can and should be defined independently of the mapping properties
      - of the syntax-semantics interface
  - in contrast, RRG treats such properties as part of the definition of units of syntax such as the core

40

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41

References

Baker, Mark C. 1989. Object sharing and projection in serial verb constructions. *Linguistic Inquiry* 20: 513-543.

Bohnemeyer, Jürgen. 2003. The unique vector constraint. *Representing direction in language and space*, ed. by Emile van der Zee and Jon Slack, 86-110. Oxford: Oxford University Press.

Bohnemeyer, J., N. J. Enfield, J. Essegbey, I. Ibarretxe-Antuñano, S. Kita, F. Lübke, & F. K. Ameka. 2007. Principles of event segmentation in language: The case of motion events. *Language* 83(3): 495-532.

Bohnemeyer, J., N. J. Enfield, J. Essegbey, I. & S. Kita. (In press). The macro-event property: The segmentation of causal chains. In J. Bohnemeyer & E. Pederson (eds.), *Event representation in language*. Cambridge: Cambridge University Press. http://www.acsu.buffalo.edu/~jb77/Eugene_paper_jb&al_draft_03.pdf

Bresnan, Joan. 1980. Polyadicity. *Lexical grammar*, ed. by Teun Hoekstra, Harry van der Hulst, and Michael Moortgat, 97-121. Dordrecht: Foris.

Carlson, Greg N. 1998. Thematic roles and the individuation of events. *Events and Grammar*, ed. by Susan Rothstein, 35-52. Dordrecht: Kluwer.

42

References (cont.)

Casati, Roberto, and Achille C. Varzi. 1999. *Parts and Places: The Structures of Spatial Representation*. Cambridge, Mass. etc.: MIT Press.

Chomsky, Noam. 1981. *Lectures on Government and Binding*. Dordrecht: Foris.

Dixon, Robert M. W. 2006. Serial verb constructions: Conspectus and coda. *Serial verb constructions: A cross-linguistic typology*, ed. by Alexandra Y. Aikhenvald and Robert M. W. Dixon, 338-350. Oxford: Oxford University Press.Fillmore 1968

Hasegawa, Yoko. 1996. *A Study of Japanese Clause Linkage: The Connective TE in Japanese*. Stanford: CSLI.

Nunes, Mary L. 1993. Argument linking in English derived nominals. *Advances in Role and Reference Grammar*, ed. by Robert Van Valin, Jr., 375-432. Amsterdam: Benjamins.

Sebba, Mark. 1987. *The syntax of serial verbs*. Amsterdam: John Benjamins.

Van Valin, R. D., Jr. 2005. *Exploring the syntax-semantics interface*. Cambridge: Cambridge University Press.

Van Valin, R. D., Jr. & R. J. LaPolla. 1997. *Syntax: Structure, meaning and function*. Cambridge: Cambridge University Press.

43