

# Motion Predicates and the Compounding Parameter: A New Approach

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## 1. Background

### 1.1 Talmy's Verb-framed/Satellite-framed Typology

- (1) Talmy (1985, 1991, 2000) distinguishes between “satellite-framed” (English-type) languages and “verb-framed” (Spanish-type) languages.
- (2) *In English, path is normally expressed by a “satellite” – a particle or PP (Talmy 1985:62):*

- a. The rock slid/rolled/bounced down the hill  
b. The napkin blew off the table

*In Spanish, path is normally expressed in the main verb (Talmy 1985:69):*

- c. La botella entró a la cueva (flotando)  
the bottle moved-in to the cave (floating)  
'The bottle floated into the cave'
- d. La botella pasó por la piedra (flotando)  
the bottle moved-by past the rock (floating)  
'The bottle floated past the rock'

- (3) Characteristics of English-type, but not Spanish-type languages, include:

verb-particle constructions, resultatives,  
manner-of-motion verbs + path-of-motion PPs  
resultative: *walk to the store*  
non-resultative: *slide down the banister*

### 1.2 The Compounding Parameter (Snyder 1995, 2001)

- (4) **TCP (First Approximation):** The language {allows, disallows} formation of endocentric root compounds during the syntactic derivation.
- (5) In [+TCP] languages, but not [-TCP] languages, novel endocentric compounds can be created at will.

- (6) a. English: *banana box* 'box in which bananas are stored'  
b. Spanish: *\*banana caja, \*caja banana*

*Generalizations from (Snyder 1995):*

- (7) Verb-NP-Particle constructions are possible only in [+TCP] languages.
- (8) a. English: Mary lifted the box up.  
b. Spanish: María levantó la caja (*\*arriba*).
- (9) Transitive resultative constructions are possible only in [+TCP] languages.
- (10) a. English: John beat the iron flat.  
b. Spanish: Juan golpeó el hierro (*\*plano*).
- (11) *Cross-linguistic survey:*

Language	Separable particles?	Transitive resultatives?	Novel N-N compounds?
<i>Austroasiatic:</i> Khmer	Yes	Yes	Yes
<i>Finno-Ugric:</i> Estonian	Yes	Yes	Yes
<i>Germanic:</i> Dutch	Yes	Yes	Yes
<i>Sino-Tibetan:</i> Mandarin	Yes	Yes	Yes
<i>Tai:</i> Thai	Yes	Yes	Yes

Japanese	No	Yes	Yes
American Sign Language	No	Yes	Yes

Basque	No	No	Yes
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<i>Afroasiatic:</i> Egyptian Arabic	No	No	No
<i>Austronesian:</i> Javanese	No	No	No
<i>Romance:</i> Spanish	No	No	No
<i>Slavic:</i> Serbo-Croatian	No	No	No

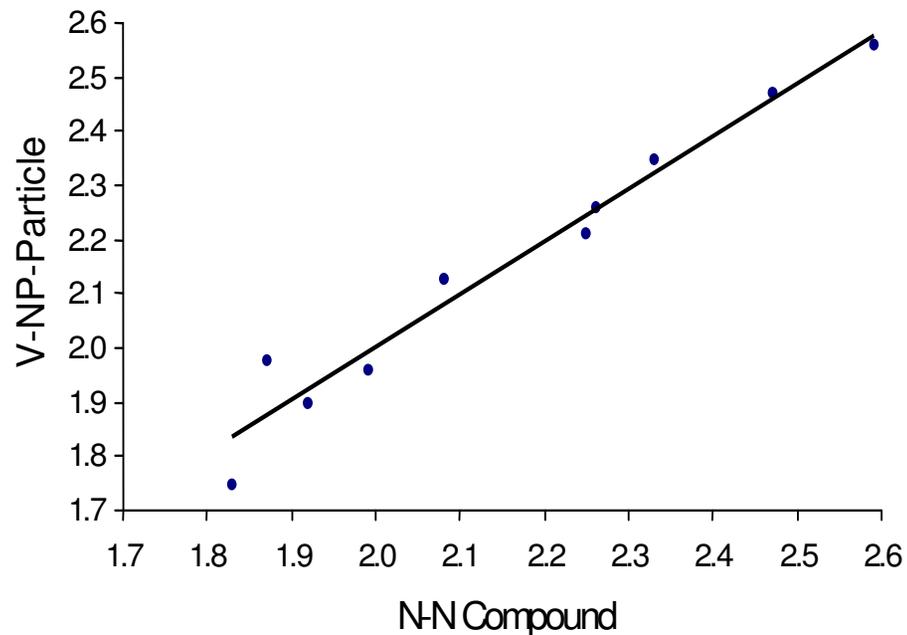
(12) *Longitudinal study of English acquisition:*

In the spontaneous production data for ten children from the CHILDES database (MacWhinney 2000), age of first clear use of the V-NP-Particle construction (in years) was compared with age of first clear use of a novel (non-lexical) N-N compound.

(13) *Notes on methodology*

- Both V-NP-Particle constructions and novel N-N compounds occur frequently in the speech of older children and adults.
- Age of acquisition was taken as age of first clear use, followed shortly afterwards by regular use (cf. Stromswold 1996).
- Imitations, repetitions, and formulaic expressions were excluded.
- Partial correlation was used to rule out a number of non-parametric sources for a correlation.

(14) *Acquisitional findings:*



- Correlation is exceptionally strong:  $r=.98$ ,  $t(8)=12.9$ ,  $p<.00005$
- Partial correlations, removing the contributions of various control measures, remain extremely strong.

Partialling out...

The age at which each child's MLU reached 2.5 words:  $r=.94$ ,  $p=.0001$

The age of each child's first lexical N-N compound:  $r=.95$ ,  $p=.0001$

The age of each child's first A-N combination:  $r=.95$ ,  $p=.0001$

(15) *A note on the parametric prediction:*

The [+TCP] setting seems to be the "limiting" factor for the V-NP-Particle construction, but this was not logically necessary, because [+TCP] is only one of the prerequisites for the construction.

(For example, Japanese is [+TCP], but lacks a separable particle construction.)

**2. Are the two typologies the same? Test: Non-resultative Path PP's**

- (17) The resultative path phrases, as in *walk to the store*, are analyzed as a type of resultative construction in (Beck & Snyder 2001a,b), and are shown to be closely related to compounding in their acquisition by English-learning children.
- (18) The non-resultative path phrases, as in *slide down the banister*, are not among the constructions considered in either (Snyder 1995) or (Beck & Snyder 2001a,b), but are treated by Talmy as a characteristic of Satellite-framed languages.
- (19) Question: Do English non-resultative path PP's also depend on the positive setting of the Compounding Parameter?
- (20) Study of Spontaneous Speech Data (Snyder, Felber, Kang & Lillo-Martin 2001): Longitudinal corpora from ten English speaking children were taken from CHILDES (MacWhinney 2000).
- (21) Examples of a motion verb with a non-resultative path PP:

<u>Child</u>	<u>Utterance</u>	<u>Age</u>
Allison	<i>I'm running (a)round you!</i>	2;04.00
Nathaniel	<i>slide down the ladder</i>	2;05.18
Nina	<i>flying in circles</i>	2;00.03
Peter	<i>roll down there</i>	2;01.00
	[rolling a car down a slide]	
Sarah	<i>climb up the stairs</i>	3;01.03

- (22) First clear use of a motion verb with a non-resultative path PP is closely correlated with first clear use (from Snyder 1995) of a novel N-N compound ( $r=.91$ ,  $t(8)=6.26$ ,  $p<.001$ ).
- (23) This correlation remains significant even after partialling out the age of first clear use of a V with a non-path PP ( $r=.80$ ,  $t(7)=3.52$ ,  $p=.01$ ).
- (24) In sum, evidence from non-resultative path PP's strongly supports the idea of deriving Talmy's typology from TCP.

### 3. Why should compounding matter?

*Past approaches:*

- (25) Snyder (2001 *Language*): Certain modes of semantic composition are available only word-internally. TCP determines whether syntactic sisters can be treated as forming a complex word.
- (26) Beck & Snyder (2001b *Festschrift*): Languages differ parametrically in the availability of a semantic composition rule ("Principle R"). This rule combines non-resultative predicates and yields a resultative interpretation. (The connection to compounding is left mysterious. Cf. also Higginbotham 1999.)
- (27) Zubizarreta & Oh (2004): Languages differ parametrically in the availability of a transparent rule for the semantic composition of compounds. If a language has this rule then (for example) it will allow the following structure, with the verb *dance* compounded to an empty light verb encoding the meaning of directed motion, to be interpreted as 'John moves to the kitchen in a dancing manner'.

(Ch.1, p.29, ex. 65): [John [<sub>VP\*</sub> [<sub>V\*</sub> dance V\*] to the kitchen]]

*A new approach:*

- (28) Languages differ parametrically in the availability of a semantic composition rule ("Rule C") that is required both to interpret novel compounds and to "build" complex-event descriptions (e.g. accomplishments) out of simple-event predicates.

*More precisely, I propose the following:*

- (29) Verbs normally take a Davidsonian event argument. I propose that a path PP introduces its own, separate event argument.
- (30) Yet, a VP is permitted to have only one open event argument. Hence, the two event predicates (V and PP) need to be combined in some way.

- (31) There is only one form of semantic composition that can combine two separate event-descriptions into the description of a single, complex event: Rule C.

#### (32) Rule C

If  $a = [b\ c]$ , and  $b'$  and  $c'$  both have an open argument position of semantic type  $x$ , then (ignoring any other open argument positions)  $a' = c'$  OF THE KIND ASSOCIATED WITH  $b'$ .

- (33) Rule C can apply to predicates of events or predicates of individuals. In the latter case, it provides a general mechanism for the semantic interpretation of root compounds.
- (34) Thus, if Rule C is available, novel root compounds can be freely created in the syntax and interpreted compositionally.
- (35) **TCP (Revised):** Rule C {is, is not} available at the syntax/semantics interface.

*Examples:*

- (36) *frog man* 'man of the kind associated with frogs'
- (37) a. John is painting [the barn]<sub>1</sub> [<sub>t<sub>v</sub></sub> + [PRO<sub>1</sub>  $\emptyset$ <sub>BECOME</sub> red]]  
 b. There exists an event of John painting the barn, and this event is of the kind associated with the barn becoming red.  
 c. There exists an accomplishment whose development consists of John painting the barn, and the culmination of this event is the barn becoming red.
- (38) a. [The bottle]<sub>1</sub> floated [PRO<sub>1</sub> under the bridge]  
 b. There exists a (past) event of the bottle floating, and this event is of the kind associated with the bottle moving to a location under the bridge.  
 c. There exists an accomplishment whose development consists of the bottle floating, and the culmination of this event is the bottle moving to a location under the bridge.
- (40) Distinctive properties of the new approach:
- (a) A connection is made between complex predicates and compounding (in contrast to Beck & Snyder 2001b);
- (b) Yet, complex predicates do not themselves require compounding (*contra* Snyder 2001, Zubizarreta & Oh 2004).

#### 4. Support for the new approach: French

(41) French is [-TCP], but allows word-formation in the syntax.

Examples from (Dikken 1990):

- (42) a. Mes amis [laisseraient manger] tous de la salade à ce garçon.  
my friends would-let eat ALL salad DAT this boy  
'My friends would all let this boy eat salad.' (cf. MdD p.5, ex.17a)
- b. Mes amis laisseraient ce garçon manger (\*tous) de la salade.  
my friends would-let this boy eat ALL salad  
'My friends would (all) let this boy eat salad.' (cf. MdD p.5, ex.18)
- (43) Mes amis [feront manger] tous des pommes de terre à leurs enfants.  
my friends will-make eat ALL potatoes DAT their children  
'My friends will all make their children eat potatoes.' (cf. MdD p.5, exs.17b)

Analysis (Dikken 1990):

- (44) In the *laisser*-Dative and *faire* constructions, the embedded verb forms a complex word with *laisser* or *faire*.
- (45) Interpretation of (43): My friends will CAUSE an event/situation of their children eating potatoes. [No event composition is required.]
- (46) Marie a martelé (\*plat) le métal.  
Mary has hammered (\*flat) the metal
- (47) Intended interpretation of (46): There exists an accomplishment whose development consists of Mary hammering the metal, and the culmination of this event is the metal becoming flat.
- (48) Conclusions (*contra* Snyder 2001):
- a. The possibility of word-formation in the syntax is not limited to [+TCP] languages;
- b. Word-formation in the syntax is not sufficient to "build" a complex-event description (e.g. an accomplishment) out of simple-event predicates.

#### 5. Approach to Japanese

(49) Japanese is classified as [+TCP] on the grounds that it allows creation of novel root compounds, and allows (some) resultatives (Washio 1997).

(50) Sugisaki & Isobe (2000) have found a strong acquisitional contingency between compounding and resultatives in Japanese three- to four-year-old children.

(51) Yet, Japanese lacks separable particle constructions, as well as true path PPs.

(52) For example, Japanese lacks direct counterparts to the English prepositions *down* and *under* in the following:

- a. The child slid down the banister.  
b. The boat floated under the bridge. (Path reading)

(53) Hence, most researchers working within Talmy's framework classify Japanese as verb-framed.

(54) Proposal: Japanese is "by rights" a satellite-framed language, but this is obscured by an independent property: Japanese has an extremely limited inventory of adpositions. In particular, the eventive Ps needed for path PPs and English-type particles are missing.

(55) Supporting evidence:

- a. In absolute terms, the number of adpositions in Japanese is unusually low.  
b. Japanese relies heavily on spatial nouns such as *ue* 'space overtop (of)' and *naka* 'interior', where even verb-framed languages like Spanish have adpositions (e.g. *sobre* 'above', *dentro* 'within').  
c. The possibility of a given adposition often seems to depend on the verb(s) that are present.  
d. Taro-ga kooen-e aruite-itta / \*aruita. (cf. Tsujimura 1996)  
Taro-NOM park-ILL walk-go-PAST / \* walk-PAST  
'Taro walked to the park.'

(56) New supporting evidence (Mamoru Saito, p.c.):

hasi-no sita-e oyogu-no-wa zikan-ga kakarisugitu.  
bridge-GEN underneath-TO swim-ING-TOP time-NOM take\_too\_much  
Swimming under the bridge takes too long. (Path reading)

(57) Note: Contrary to Zubizarreta & Oh's (2004) prediction, (56) does not require a compound verb. (On the resistance of Japanese to zero verbs, see Miyoshi 2001).

(58) Thus, within the constraints of its lexical inventory, Japanese *does* allow path phrases with simple activity verbs.

(59) In sum, the fact that Japanese fails most (though not all) of Talmy's tests for satellite-framing is probably due to the characteristics of its adposition system.

## 6. Summary

- (60) I have argued that the verb-framed/satellite-framed distinction follows directly from The Compounding Parameter of (Snyder 1995, 2001).
- (61) In a departure from certain earlier work (e.g. Snyder 2001), I now take TCP to be fundamentally a parameter of the syntax-semantics interface.
- (62) For this approach to work, it will be necessary for the inventory of interpretive rules to be tightly constrained.
- (63) TCP remains a “global” parameter (or “macroparameter”) of the human language faculty.
- (64) The time course of child language acquisition has served as a crucial testing ground for theories of language variation.

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