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Linguistic Variation and Lexical Parameter: The Case of Directed Motion

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1 Introduction

Recent approaches to cross-linguistic variation in the expression of directed motion events (e.g., *run to the store*) assume that there is a particular parameter that distinguishes one language group from another in allowing manner of motion verbs to combine with directional goal PPs. These macro-parametric approaches further predict that there is a cross-linguistic correlation between adjectival resultatives (e.g., *wipe the table clean*) and directed motion constructions (e.g., Beck and Snyder, 2001; Mateu and Rigau, 2002; McIntyre, 2004; cf. Zubizarreta and Oh, 2007). Beck and Snyder (2001), in particular, argue that languages that allow resultatives also allow manner verbs to combine with goal (or telic path) PPs based on the Compounding Parameter (Snyder, 1995, 2001) and Principle R. This paper, however, shows that such macro-parametric approaches fail to capture a broader range of cross-linguistic data. I show, based on languages spoken in Indonesia, that there is no necessary correlation between the availability of directed manner of motion constructions (hereafter DMMC, following the abbreviation used in Son and Svenonius, 2008b) and that of resultative phrases in a given language. I further show that variation in DMMCs arises from differences in the inventory of and the lexical properties of the adpositions in question, i.e., a lexical parameter, rather than a global parametric setting that distinguishes one language from another.

2 The Typology of Directed Motion: Talmy (1975, 1985, 2000)

According to Talmy (1975, 1985, 2000), languages split into two major groups, satellite-framed and verb-framed languages, where the classification is based on how meaning components of directed motion events (such as manner and path) are morphosyntactically realized. English and German, for instance, belong to the satellite or path type, wherein manner is often conflated with a motion verb and path is expressed as a satellite to the manner verb (e.g., particles, prepositions), as in (1).

- (1) a. Mary ran/walked/crawled to the store. *English*
b. Hans lief/kroch zum Laden.
John ran/crawled to.the.DAT store
'John ran/crawled to the store.' *German*

Spanish and Korean are described as verb-framed languages, in which path is generally expressed in a main predicate and manner appears as an adjunct phrase. In these languages, manner of motion verbs alone cannot license directed motion interpretations with goal PPs, as seen below.

- (2) a. Juan ??corrio/*anduvo/*gateo a la tienda.
Juan ran/walked/crawled to the store
'John ran/walked/crawled to the store.' *Spanish*
b. *Mary-ka kakey-ey ttwi/kel/ki-ess-ta.
Mary-NOM store-LOC run/walk/crawl-PAST-DC
'Mary ran/walked/crawled to the store.' *Korean*

It has often been argued that Talmy's typological split shown above between English-type and Spanish-type languages arises due to a particular choice of a parameter setting that determines whether manner verbs can combine with goal-expressing PPs (Beck and Snyder, 2001; Mateu and Rigau, 2002; McIntyre, 2004, cf. Zubizarreta and Oh, 2007). In particular, Beck and Snyder (2001) argue that DMMCs have properties similar to various other complex predicate constructions (e.g.,

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resultatives, particle/double object constructions), and that the DMMC is subject to the same parameter setting that determines whether a language allows the formation of these complex predicates.¹ Thus, they predict that there is a cross-linguistic correlation between DMMCs and other complex predicate constructions, in particular resultatives.² The prediction is arguably confirmed by the cross-linguistic survey reported in Beck and Snyder (2001), as in (3) and exemplified in (4) and (5) based on English and Spanish.

- (3) a. No resultatives - no goal PP: Spanish/French, Hebrew, Hindi-Urdu, Russian
 b. Resultatives - goal PP: English, German, Japanese(?)/Korean, Mandarin
- (4) a. John pounded the meat flat.
 b. John wiped the table clean.
- (5) a. *John golpeó la carne plana.
 John pounded the meat flat
 ‘John pounded the meat flat.’
 b. *John frotó la mesa limpia.
 John wiped the table clean
 ‘John wiped the table clean.’

We have seen earlier that manner verbs in English can license directed motion interpretations with goal PPs (1-a), while those in Spanish cannot (2-a). Thus, as far as English and Spanish are concerned, the availability of directed manner of motion constructions appears to coincide with the availability of resultative phrases, as seen in (4) and (5).

However, the cross-linguistic correlation between the two aforementioned constructions fails to hold when languages outside the Indo-European language family are considered. Korean and Japanese, for example, do not allow DMMCs (e.g., (2-b)) (contrary to the observation made by Beck and Snyder, 2001). However, resultative phrases are attested in both languages.³ Hebrew, Czech, Malayalam and a number of Austronesian languages spoken in Indonesia allow manner of motion verbs to co-occur with goal PPs for directed motion interpretations. Nonetheless, they all lack (adjective) resultative phrases.⁴ Focusing on Indonesian with reference to Javanese and Balinese, I show, in the following section, that the possibility of manner verbs to combine with goal-denoting PPs is independent of the possibility of constructing resultative phrases, suggesting that the two constructions are not governed by the same parametric setting.

3 Directed Motion-Resultative Correlation Revisited: Indonesian with Reference to Javanese and Balinese

Snyder (2001) reports, based on data from Javanese, that Austronesian languages are unmarked for the Compounding Parameter and Principle R, which means that they should not allow resultative and directed motion constructions. The following set of examples confirm the observation that Indonesian and Javanese do not allow resultative phrases to be selected directly as complements of the manner verbs. Result-denoting adjectives must be expressed in an adjunct clause headed by the clausal adverbial, *sampai* in Indonesian and *sampek* in Javanese, both of which roughly mean ‘until.’

- (6) a. Tika menumbuk daging itu *(sampai) penyet.
 Tika pound meat the until flat
 ‘Tika pounded the meat until it became flat.’

¹See Snyder (1995, 2001) and Beck and Snyder (2001) for detailed discussion of the Compounding Parameter and Principle R, respectively, both of which are responsible for the availability of resultatives and DMMCs.

²See also Aske (1989) who first speculated that there might be a connection between the availability of resultative phrases and the possible combination of manner verbs and (telic) goal PPs based on Spanish.

³See Son and Svenonius (2008b) for examples of Korean resultatives and references therein.

⁴See Son (2007) for actual examples of these languages and further observations.

- b. Tika mengelap meja itu *(sampai) bersih.
Tika wipe table the until clean
'Tika wiped the table until it became clean.' *Indonesian*
- (7) a. Mary ngelap mejo *(sampek) resik.
Mary wipe table until clean
'Mary wiped the table until it became clean.'
- b. Mary nyacah daging *(sampek) ajur.
Mary beat meat until flat
'Mary beat the meat until it became flat.' *Javanese*

However, contrary to the observation made in Snyder (2001), DMMCs are attested in Indonesian, as described in Sneddon (1996).⁵

- (8) a. Dia berjalan ke kota.
3.SG walk to city
'He walked to the city.'
- b. Mereka berenang ke seberang sungai.
3.PL swim to other.side river
'They swam to the other side of (or across) the river.' (Sneddon, 1996:189–190)

Further evidence showing that Indonesian allows DMMCs is provided by the following examples.^{6,7}

- (9) a. John {berlari/berjalan/merangkak} ke dalam ruangan.
John run/walk/crawl to inside room
'John ran/walked/crawled into the room.'
- b. John {berlari/berjalan/merangkak} ke bawah jembatan.
John run/walk/crawl to under bridge
'John ran/walked/crawled (to) under the bridge.'

As seen above, manner of motion verbs in Indonesian can easily combine with the directional PPs headed by *ke* 'to' and license directed goal interpretations, similar to English.

Varieties of Javanese spoken in Indonesia also allow manner verbs to form directed motion constructions with PPs. The variety spoken in Semarang in East Java is of particular interest since locational PPs can also express directionality. Thus, sentences with manner verbs combined with locational PPs are always ambiguous between a locational and a directional reading, as seen below.

- (10) a. Tika {mlaku/mlayu/mbrangkang} ning ngisor jembatan.
Tika walk/run/crawl LOC bottom bridge
'Tika walked/ran/crawled under the bridge.' (Loc and Dir)
- b. Mary {mlaku/mlayu/mbrangkang} ning ngarep omah.
Mary walk/run/crawl LOC front house
'Mary walked/ran/crawled {in/to the} front of the house.' (Loc and Dir)

The ambiguity shown above is reminiscent of the ambiguity we often find in English examples such as those given below.

- (11) a. Mary ran under the bridge. (Loc and Dir)
b. John walked behind the tree. (Loc and Dir)

⁵A number of intransitive and transitive verbs in Indonesian/Malay, Balinese, and Javanese take Voice or aspectual prefixes (e.g., *ber-Iter-* for intransitives in Indonesian). I omit separate glossings for these prefixes in the examples, unless otherwise noted when independent glossing is necessary.

⁶Malay and Balinese show the same patterns. Examples are omitted due to space limitations.

⁷The data from Indonesian, Javanese, and Balinese reported in this paper are based on the results of joint field work with Peter Svenonius, which was conducted in Indonesia in January, 2008 and funded by the *Moving Right Along* project. See Son and Svenonius (2008a) for extensive discussion of directed motion expressions in Indonesian/Malay, Javanese, and Balinese and acknowledgments therein.

Notice that when a manner verb is reduplicated in Javanese, the sentence has only a locative reading, as in (12-a). When an unambiguously directional preposition is used, the sentence has only a directional reading, as in (12-b).

- (12) a. Tika mlaku-mlaku ning ngisor jembatan.
 Tika walk-walk LOC bottom bridge
 ‘Tika walked (around) under the bridge.’ (Loc only)
- b. Tika mlaku menyang ngisor jembatan.
 Tika walk DIR bottom bridge
 ‘Tika walked (to) under the bridge.’ (Dir only)

The following examples show that not only intransitive manner of motion verbs but also transitive manner of motion verbs can take goal PPs as their complements and license directed motion interpretations.

- (13) a. John mendorong gerobak itu ke toko.
 John push cart the to store
 ‘John pushed the cart to the store.’ *Indonesian/Malay*
- b. Sally nggeret tas ning/menyang (njero) pawon.
 Sally drag bag LOC/DIR inside kitchen
 ‘Sally dragged the bag into the kitchen.’ *Javanese*

Snyder (1995, 2001) argues that the availability of other complex predicate constructions such as double object and verb particle constructions (e.g., *John kicked the ball out*) are also subject to the Compounding Parameter, and their availability in a language coincides with the availability of resultatives. However, despite the absence of resultatives, double object constructions are easily detectable in Indonesian (as well as Balinese and Javanese) and have syntactic and semantic properties similar to English double object constructions (see Son and Cole, 2008).

- (14) a. Tika mem-(p)anggang-kan Eric roti itu.
 Tika meN-bake-KAN Eric bread the
 ‘Tika baked Eric the bread.’
- b. John mem-ber(i)-i Peter surat itu.
 John meN-give-I Peter letter the
 ‘John gave Peter the letter.’ *Indonesian*

Most Austronesian languages are known to lack verb particle constructions. However, notice that Balinese has something similar to English verb particle constructions, as illustrated below.

- (15) a. Tika mejalan pesu (*umah-e).
 Tika walk out house-DEF
 ‘Tika walked out.’
- b. Tika mejalan diwangan umah-e.
 Tika walk out.DIR house-DEF
 ‘Tika walked out of the house.’
- c. Tika nendang bal pesu (*umah-e).
 Tika kick ball out house-DEF
 ‘Tika kicked the ball out.’
- d. Tika nendang pesu bal.
 Tika kick out ball
 ‘Tika kicked out the ball.’

As seen in (15-a) and (15-c), *pesu* ‘out’ cannot take a ground object, unlike its prepositional counterpart *diwangan* ‘out of’ in (15-b). Furthermore, *pesu* can shift to the front of the object, as shown in (15-d), similar to English particle shift (e.g., Ramchand and Svenonius, 2002).

We have seen thus far that the previous macro-parametric analyses that assume a tight correlation between directed motion and adjectival resultatives fail to account for the facts drawn from

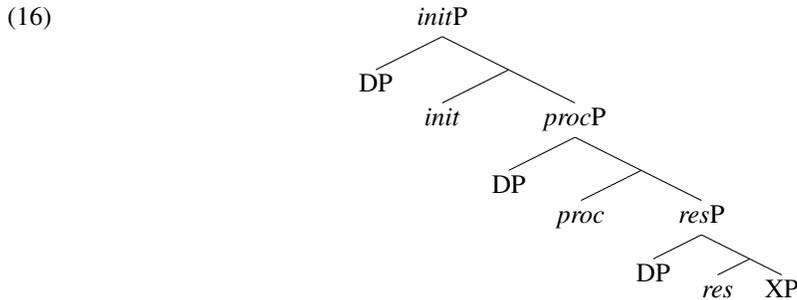
Austronesian languages spoken in Indonesia. Indonesian, Javanese, and Balinese show patterns more similar to satellite-framed languages than to verb-framed languages concerning directed motion constructions. Nonetheless, they disallow adjective resultatives, contrary to Snyder's (1995; 2001) prediction. Thus, I conclude that cross-linguistic variation in directed motion expressions is not subject to the same parametric setting that determines whether or not a language allows resultative constructions. Instead of attempting to remedy the previous analyses, I examine carefully the individual adpositions (prepositions/postpositions) involved in directed motion constructions and argue that the differences between English-type and Spanish-type languages arise from differences in the lexical featural properties of the adpositions in question.⁸

4 Alternative: Lexical Parameter Approach

In this section, I show that a preposition appearing in the purported satellite-framed languages in Talmy's typology is a Path head in the extended PP structure, while an adposition appearing in verb-framed languages is a Place head. The differences between PathP and PlaceP being selected as a complement of a motion verb have important consequences in the grammaticality of sentences involving manner verbs for directed motion interpretations. Furthermore, I show that verb-framed languages (e.g., Spanish and Korean) lack an adposition that denotes telic Path, equivalent to English *to*. This results in the failure of lexicalizing (telic) Path in the functional structure of DMMC, which I assume to be universal (see also Son and Svenonius, 2008b). Before turning to the main claims, I briefly discuss the framework adopted in the analysis in the following subsection.

4.1 Framework

I follow the view that there is a tight correlation between the semantics of event structure and the morphosyntax, and that the syntactic projection of arguments is based on event structure (e.g., Hale and Keyser, 1993; Borer, 1994; Ramchand, 2008). In particular, I adopt the finer-grained functional structure advanced in Ramchand (2008), in which a verb phrase is decomposed into three different sub-eventual components, *init*(iation)P, *proc*(ess)P, and *res*(ult)P. Each component is syntactically projected and forms a predicational relation with its subject in the specifier position, as in (16).



*Init*P introduces the causation/initiation of event and licenses different types of external argument. *Proc*P specifies the nature of the change or process and licenses the object of change or process (comparable to VP). *Res*P gives the 'telos' of the event and licenses the object of result (comparable to a small clause, Hoekstra and Mulder, 1990). The projection of each subeventual component is determined by verbal meaning (e.g., *init*P is present when the verb expresses causation or initiation, and *res*P is present when the verbal meaning entails a result state, etc.).

I further adopt a decompositional model of the P domain (e.g., Koopman, 2000; Svenonius, to appear), according to which a prepositional or postpositional head is further decomposed into Path

⁸The analysis presented in this paper is a precursor of the analysis provided in Son and Svenonius (2008b), which is more formalized in the minimalist sense and discusses cross-linguistic variation in both directed manner of motion and resultatives from a micro-parametric perspective.

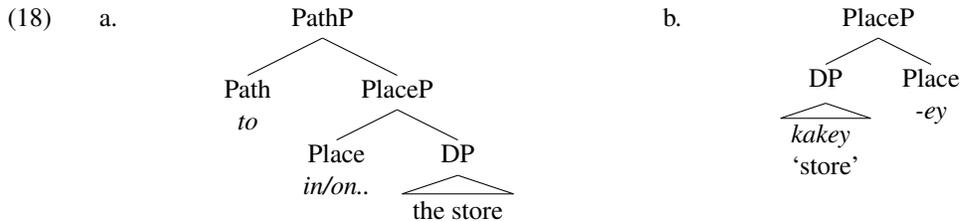
and Place with Place being dominated by Path, as depicted in (17).⁹



It has also been shown that the decomposition of spatial P into Path and Place has semantic and morphological correspondences.¹⁰

4.2 Absence of Telic PathP in Spanish-Type Languages

Based on the extended PP structure given in (17), I argue that adpositions often analyzed as being equivalent to English *to* in verb-framed languages are all PlacePs. For instance, *-ey* in Korean and *a* in Spanish, often translated as ‘to’ in directed motion contexts, are not equivalent to the telic path *to*. They are (static) locative Ps, realizations of a Place head, as depicted in (18-b) (see also Son, 2006, cf. Zubizarreta and Oh, 2007).¹¹ On the other hand, English *to* in motion constructions is often analyzed as a Path head (e.g., Koopman, 2000; Svenonius, *to appear*), as illustrated in (18-a).



The different lexical properties of Korean *-ey* and English *to* can be confirmed by the examples given below, which show that the dynamic, accomplishment preposition *to* cannot be selected by the stative verb *be* or punctual transition verbs like ‘put,’ while the postposition *-ey* can.

- (19) a. *John is to the store.
 b. *Mary put the book to the table.
- (20) a. Inho-ka hakkyo-ey nam-a iss-ta.
 Inho-NOM school-LOC remain-LINKER be-DC
 ‘Inho is at school.’
 b. Chayk-ul chayksang-wi-ey noh-ass-ta.
 book-ACC desk-surface-LOC put-PAST-DC
 ‘I put the book on the desk.’

It has also been noted that Spanish, French and Italian lack a preposition equivalent to the telic path *to*. Folli and Ramchand (2005), for example, argue that the telic path preposition *to* is unavailable in Italian.¹² Vandeloise (1991) argues that *à* in French, often translated as ‘to,’ is a spatial P that roughly means ‘at/on.’ The following examples confirm the status of these prepositions as a locative P, a realization of Place, in Italian and French, given that they can also occur as complements

⁹See Svenonius (2006) for finer-grained decomposition of Place into AxPart and Place.

¹⁰See Zwarts (2005) and Zwarts and Winter (2000) for semantic motivation and Svenonius (*to appear*) for morphological evidence for the decomposition of P.

¹¹See Tanaka (2002) and Ayano (2008) for a similar argument regarding *-ni*, the Japanese equivalent of Korean *-ey* in directed motion contexts.

¹²Italian, however, is more liberal than Spanish and French in allowing DMMCs, although it is more restricted than English. See Folli and Ramchand (2005) for an analysis that attributes the less-restricted combinatory possibility of manner verbs with goal-PPs (*a*-phrases) to lexical semantic properties of the manner verbs.

of the stative verb *be*, similar to *-ey* in Korean.

- (21) a. Gianni è a casa di Maria.
 John is LOC house of Mary
 ‘John is at Mary’s house.’ Italian
- b. Le point est à l’intersection des deux lignes.
 the point is LOC the.intersection of two lines
 ‘The point is at the intersection of two lines.’ French: Vandeloise (1991)

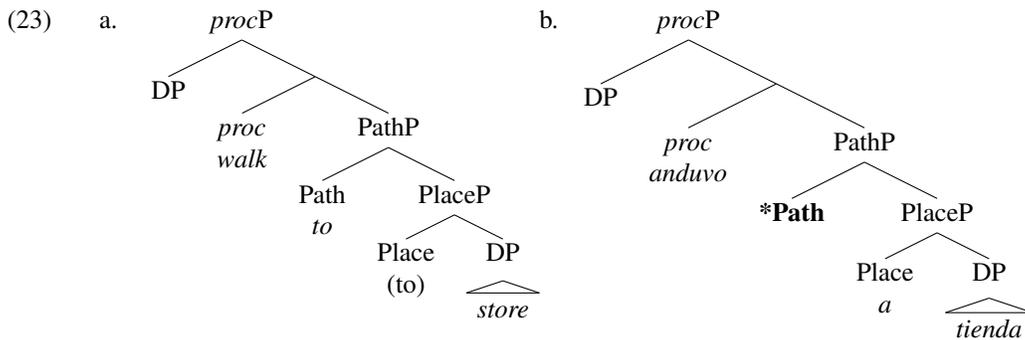
Spanish *a* appears to differ from its equivalents in French and Italian, since, as seen in (22-a), it cannot occur as a complement of the stative verb ‘be’ by itself. However, notice that Spanish *a* also has a locative sense in the context of AxParts (Antonio Fábregas, p.c.), as illustrated in (22-b) (see Fábregas (2007) for further discussion of Spanish *a* as a Place head).

- (22) a. *Juan está a la casa.
 Juan be LOC the house
 ‘John is at home.’
- b. El raton está al lado del libro.
 the mouse is LOC.the side of.the book
 ‘The mouse is beside (next to) the book.’

Having shown that all adpositions occurring in DMMCs of the verb-framed languages are Place heads, an immediate question we have to answer is how we explain the ungrammaticality of (2), where manner verbs cannot combine with PlacePs.

Under the framework adopted here, it is assumed that verbs of the *proc*-type (e.g., *walk*) cannot combine directly with PlaceP but select PathP as their complement due to event-argument homomorphism (Krifka, 1998). On the other hand, verbs of the *res*-type (see below) take a (final-)state-denoting complement (e.g., location-denoting PlaceP or property-denoting AP). When combining with a PlaceP, the semantics of the *res* head straightforwardly give rise to the ‘goal’ interpretation of the final location denoted by PlaceP (see Ramchand, 2008 for the details of semantic composition).

Assuming that the syntactic structure of DMMC is universal, *walk to the store* in both English and Spanish can be represented along the lines of (23).¹³



An additional assumption made here is that each terminal node in the structure must be licensed or lexicalized by the insertion of an appropriate vocabulary item, i.e., Exhaustive Lexicalization (Fábregas, 2007). Furthermore, a single vocabulary item or morpheme may ‘span’ more than one functional head, adopting in part the nano-syntax framework developed by Michal Sarke in his seminar lectures in Tromsø (see Son and Svenonius, 2008b for further references). In (23-a), the morpheme *to* in English can lexicalize (or span) both Path and Place (indicated by the parenthesized *to* under Place). In (23-b), however, the structure cannot converge since there is no vocabulary item

¹³In Son and Svenonius (2008b), an additional functional head, *Dir*, is posited above Path to capture further fragmentation of the variation we have identified across languages.

to lexicalize Path in Spanish (and Korean), hence the ungrammaticality of (2).¹⁴

Notice that even in Spanish-type languages, there is a way to express directed motion events, for example, with inherently directional verbs (e.g., ‘go/come’) and punctual transition verbs (e.g., ‘fall,’ ‘drop’). These verbs can combine directly with PlacePs (e.g., *ey*-phrases in Korean and *a*-phrases in Spanish). Consider Korean examples given below.

- (24) a. Mary-ka cip-ey ka-(a)ss-ta.
 Mary-NOM house-LOC go-PAST-DC
 ‘Mary went to the house.’
 b. Tongcen-i kwumeng-ey ppaci-ess-ta.
 coin-NOM hole-LOC fall.into-PAST-DC
 ‘The coin fell into the hole.’

I argue that the combination of *ka*-‘go’/*ppaci*-‘fall into’ and the final-location-denoting *-ey* phrase in Korean is possible since these verbs entail an end-state and license a *res* feature. Thus, the *res*P licensed by these verbs can take the PlaceP headed by *-ey* as its complement.¹⁵

4.3 Presence of (Telic) Path Prepositions in English-Type Languages

We saw earlier that Indonesian (and its related languages spoken in Indonesia) shows patterns similar to English concerning DMMCs. An explanation for the availability of DMMCs in Indonesian is straightforward. Indonesian has a vocabulary item that can license Path, i.e., *ke* ‘to,’ and thus should behave similarly to English, rather than to Spanish and Korean. As seen below, the preposition *ke* ‘to’ in Indonesian can only be used as a directional path P, similar to English *to*, and the PP headed by *ke* cannot be selected by stative predicates.

- (25) Mary tinggal *ke/di Paris.
 Mary stayed to/in Paris
 ‘Mary stayed *to/in Paris.’

For the patterns found in Javanese (see (10)), I posit a null morpheme to lexicalize Path (such null morphemes are acquired on the basis of positive evidence available in the language). Thus, when the combination of manner verbs and locative PPs has a directional interpretation, Path is licensed by the null morpheme and Place is lexicalized by the locative preposition *ning*. Javanese also has an overt counterpart of the null morpheme to lexicalize Path, *menyang* as we saw in (12-b).¹⁶

5 Conclusion

By demonstrating that the DMMC-resultative correlation does not hold in languages spoken in Indonesia (among other unrelated languages discussed in Son, 2007 and Son and Svenonius, 2008b), I argued that previous macro-parametric approaches to variation in DMMCs are too coarse-grained to capture the actual variation we observe across languages. The macro-parametric analysis based on

¹⁴It should be noted that this paper is concerned only with the structure of DMMCs with telic path interpretations. When a motion event is unbounded or atelic, Spanish and Korean do allow some manner verbs to license (unbounded) directed motion interpretations with atelic Path PPs. This is possible under the current analysis since there is nothing that prevents manner verbs (*proc*-verbs) from combining with path PPs, if appropriate vocabulary items are available. Both Spanish and Korean have vocabulary items that denote atelic Path, *hacia* in Spanish and *-ulo* in Korean, both meaning ‘towards.’ The previous macro-parametric analyses, however, do not explain why the typology of DMMCs should be sensitive to a particular Path type, i.e., telic Path. See Son (2006) for further discussion regarding this issue.

¹⁵See Son (2006) for the syntactic representation of (24a) and independent syntactic and semantic evidence showing inherently directional verbs (and punctual transition verbs) taking the *-ey* phrase entail result states.

¹⁶I leave open the question of whether there is a single morpheme that lexicalizes Path and *menyang* is an overt realization of the null morpheme, or whether there are two independent morphemes, a null and an overt morpheme to lexicalize Path.

Principle R (Beck and Snyder, 2001) and Snyder's (1995, 2001) Compounding Parameter may capture patterns found in, for example, English/German and Spanish/French, given that these languages conform to the prediction they make concerning the DMMC-resultative correlation. However, the facts drawn from Indonesian and its related languages suggest that DMMCs and resultatives cannot be subject to the same parametric setting. Instead of appealing to a parameter that distinguishes one language from another on a global level, I examined lexical properties of the adpositions involved in directed motion constructions and argued that differences between English-type and Spanish-type languages in expressing directed motion events can be attributed to differences in the lexical featural properties of the adpositions under scrutiny. Languages that show patterns similar to English (satellite-framed) have vocabulary items that lexicalize Path (e.g., *to*) under the framework adopted in the current analysis. On the other hand, adpositions often treated as being equivalent to English *to* in Spanish-type languages are argued to have only locative senses. In other words, they lexicalize Place, rather than Path, and languages of the Spanish-type (verb-framed) lack vocabulary items that can lexicalize (telic) Path. This explains why manner verbs in these languages cannot license directed motion interpretations with PPs, provided that the structure of DMMCs is universal.

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