The Typology of Motion Expressions Revisited*

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1 Introduction

From a typological standpoint, motion events have perhaps received more attention than almost any other type of event. The reason, most likely, is the intriguing proposal of Leonard Talmy (1975, 1985, 1991, 2000) that languages fall into two types as to how they encode directed motion events. This pioneering research inspired a plethora of further studies of an increasingly more diverse set of languages, which have revealed a variety of options for encoding directed motion events, including some that do not fit easily into the typology that Talmy proposed.

In this paper we re-examine the data on the encoding of motion events within and across languages. We take a new descriptive organizational perspective on the documented options which we believe helps to make sense of the larger picture, including why Talmy's typology naturally emerges and why not all attested options for motion event encoding fit comfortably into his typology. We argue instead that the observed cross-linguistic variation arises primarily from the interaction of motion-independent morphosyntactic and lexical factors. Taken together, these factors predict greater variation in the encoding of motion events than most previous work has acknowledged. In particular, we highlight the role of the verb in determining how the major semantic components of a directed motion event—path of motion and manner of motion—are described and combined in a single clause on the basis of two interacting morphosyntactic factors. First, while the verb is one of several lexical categories that can encode either manner or path, it is unique

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among all categories in being the only obligatory element across all clauses that describe motion (since it heads the VP that forms the nucleus of the clause).

(1) Verb is the only clause-obligatory category that can encode either manner or path.

Thus, in a given clause one of these two semantic components always has the option of verbal encoding, making the verb the single common element across all motion descriptions and making it central to how path and manner are encoded and combined cross-linguistically. This assumption has been implicit in previous work, but it is worth examining more closely to understand its ramifications for the encoding of clauses where path and manner specifications co-occur. Furthermore, we suggest that the semantic possibilities in (1) themselves follow from a more general, motion-independent constraint that non-stative verbs encode manners or results (and perhaps only one or the other) (Levin and Rappaport Hovav 1991, 1992, 1995, 1998, Rappaport Hovav and Levin in press), taking goals to be a subtype of result, something we discuss further below.

Second, the semantic component which is not expressed in the verb, if it is not inferrable from context or unimportant (and thus omissible), may (or must) be expressed by some other constituent. We argue that the available resources are invariably drawn from a larger set of manner or result encoding resources that, if available in a given language, may be exploited for encoding motion even if not specifically dedicated to this task. Examples are listed in (2).

(2) Motion-independent resources/processes that may encode or combine path and manner:
   a. Morphological: case, applicative affixes, aspectual affixes
   b. Lexical: location and result adpositions, event delimiters, particles, compounding
   c. Syntactic: serialization, adjunction, subordination

Languages may vary as to which of the processes and resources listed in (2) they have available. This set of processes and resources, when taken together, then, determines that languages should fall into a diverse set of cross-cutting types. This predicted diversity is attested, as we show below, suggesting that previous work that categorized languages in terms of how motion is encoded has made too few distinctions. For example, as mentioned, Talmy (2000) posits a two-way typology of languages depending on where path and manner are characteristically encoded. In S(atellite)-framed languages manner is characteristically encoded in the verb and path in some satellite to the verb, whereas in V(verb)-framed languages path is characteristically encoded in the verb, and manner in some satellite.[1] More recent work has extended this typology to include a third category of "equipollently-framed languages" covering languages in which "path and manner are expressed by equivalent grammatical forms" (Slobin 2004b:249; see also Zlatev and Yangklang 2004, Slobin and Hoiting 1994). This extension primarily includes languages with serial verb constructions (SVCs) that involve multiple main verbs, in which one or more verbs may encode manner and one or more may encode path. Examples of each type are given in (3).

[1]More accurately, Talmy's division is based on where *path* is encoded. Talmy (2000:102) defines a satellite as any category other than NP/PP that is a sister to V and is a dependent of V, including affixes (separable and inseparable), particles, co-verbs, etc. The exclusion of NP/PP from the satellite category seems primarily to be influenced by the fact that these categories often co-occur with satellites. However, we shall not distinguish NP/PP from satellites here since NP and PP sisters to V often serve the same function as satellites proper in indicating path-related notions.

(3) a. **S(atellite)-framed** (English, Russian, German, Mandarin):
Manner is encoded as a *main verb*; path must be a satellite.
John limped into the house. (English)

b. **V(erb)-framed** (Spanish, French, Turkish, Japanese, Hebrew):
Path is encoded as a *main verb*; manner must be a subordinate adjunct.

Je suis entré dans la maison (en boitant).
I am entered in the house in limping

'I entered the house (limping).' (French)

c. **Equipollently-framed** (Thai, Emai):
Both manner and path are encoded as *main verbs* simultaneously.

ọli ọmọhe la o vbi oa
the man run enter at house

'The man ran into the house.' (Emai; Schaefer 1986:181)

What is key to this approach is the assumption that the cross-linguistic variation in how languages encode motion reflects a single typological parameter that categorizes languages according to their prototypical behavior. However, we take seriously the increasing number of observations that putative S-framed languages often show V-framed behavior and vice versa, and that many putatively equipollently-framed languages nonetheless show S-framed and/or V-framed behavior outside of constructions that have multiple verbs. The result is that most languages straddle two or three of the previously proposed categories. In other instances, more fine-grained distinctions may subdivide the previously proposed categories, e.g. subdistinctions following from particular types of lexical resources. This ultimately suggests that more parameters are at play, exactly as our approach assumes. However, we also suggest that the previously proposed classes are not irrelevant. Rather, they reflect an overall tendency to favor certain types of languages out of the larger space of types predicted by our approach, once factors such as markedness are taken into account.

Thus, we aim to explain as much as possible the diversity in how languages encode motion via the single universal in (1) and its interaction with independent typological parameters for each language in (2). We begin by examining the considerable variation in how motion is encoded both within and across languages. In §2 we look at clauses that have a single verb (which have been the core class of data discussed in the literature on motion constructions). We discuss both the better known cases that have been cited in support of a two-way typology, as well as data which, although not unfamiliar, on closer scrutiny raise questions about the adequacy of such a typology. In §3 we turn to clauses with multiple verbs, which have receiving more attention in recent years. In §4 we look at a class of languages which have equipollent framing within a single verb, blurring the distinction between V-framed and S-framed languages. In §5 we show how this variation follows from the factors outlined in (1) and (2), so that what appears to be motion specific variation can be reduced to more basic motion-independent factors. In §6 we examine one ramification of the proposal we make here, wherein certain pragmatic effects may determine that certain types of constructions normally disallowed in a language may be acceptable in certain contexts. This would be entirely unexpected on a standard typological account, but is expected on our multifactorial approach, assuming that pragmatics is just another factor that plays a role in determining how motion events are encoded. Finally, in §7 we re-examine previous typological work in light of

(1) and (2), and argue that Talmy's typology and its extensions reflect those language types that are predicted perhaps to be preferred once external factors such as markedness are taken into consideration.

2 Encoding directed motion with one verb only

We begin by considering the range of morphosyntactic encoding options available for describing directed motion events in clauses that involve only one verb. The options fall into two classes: those in which the verb encodes manner and those in which the verb encodes path. Within each class, we explore the range of possible instantiations for expressing the component that is not expressed in the verb itself, be it manner or path. The options we consider first in §2.1 and §2.2 are compatible with Talmy's original two-way typology, where the division of labor between verb and satellite in encoding path and manner is clear. Indeed, many of these have been used previously by Talmy and others to support a two- or three-way typology of motion constructions. This overlap is unsurprising since Talmy's typology was proposed largely on the basis of motion expressions involving just one verb. Indeed, as we discuss in §2.3, a two-way typology is quite natural if the assumption is that motion expressions only involve a single verb that can encode either path or manner. But as others before us have pointed out, and as we reiterate, the range of options found in many languages is more complex than Talmy's typology predicts, especially when a wider range of possible satellite expressions are considered. We demonstrate this point in §2.3, where we present alternative options that still meet the single verb condition.

2.1 The verb encodes manner: Canonically cited patterns

We first examine motion constructions with a single verb that encodes the manner of motion, while the path is encoded as a "satellite" of the verb (i.e. S-framed behavior). Manner of motion verbs in isolation do not entail a specific path of motion, so when used in the description of directed motion events, a path needs to be explicitly introduced and expressed outside the manner verb. Languages provide a range of options for expressing the path, and we examine several of them.

2.1.1 Path particles/affixes

A common option is that the path is encoded in a particle or affix, as in the data in (4) from various S-framed languages, in which a particle/affix meaning "out" (e.g. English *out*, German *raus-*, Dutch *uit-*, Russian *vy-*) indicates the path with respect to the manner of motion described by the verb.

(4) a. An owl popped out. (English)

b. ... *weil da eine Eule plötzlich raus-flattert.*
... because there an owl suddenly out-flaps
'... because an owl suddenly flapped out.' (German; Slobin 2004b)

c. ... *omdat er een uil uit-vliegt.*
... because there an owl out-flies
'... because an owl flew out.' (Dutch; Slobin 2004b)

d. *Tam vy-skočila sova.*
there out-jumped owl
'An owl jumped out.' (Russian; Slobin 2004b)

This option is not restricted just to European languages. For example, in Mokilese (Micronesian) we also find such directional particles occurring with manner verbs:

(5) a. *Ih jei-dih-la Mwandohn.*
he paddle-down/west-PERF Mwandohn
'He paddled (down/west) to Mwandohn.'

b. *Ih aluh-dah-la in dollo.*
he walk-up-PERF LOC mountain
'He walked up to the mountain.' (Mokilese; Harrison 1976:206, (61a,b), 204, (47))

In general, such particles and affixes are not found solely in motion constructions, but rather have additional result-denoting uses in these languages. For example, English *out* may also be found in change-of-state expressions such as *John blew the candle out*, where it imparts a notion of completion to the action denoted by the verb. Similarly, the Russian prefix *vy-* can also indicate the completion of the action denoted by the verb it affixes to, as in (6), where the understood result is determined partly lexically and partly pragmatically/conventionally.

(6) *Ona vy-tjorla stol.*
she VY=wiped table.ACC
'She wiped the table (clean)' (Russian; Spencer and Zaretskaya 1998:15, (44))

Furthermore, particles and affixes also often have purely aspectual uses as well. For example, English *up* has purely completive uses (e.g. *sweep up*), as do many affixes in Russian (e.g. *na-* is often thought of as a perfective/completive marker which does not necessarily indicate a specific result state with verbs it occurs with; Spencer and Zaretskaya 1998:24–25). The connection between goal/result-marking and completion is not surprising: predicates that entail arriving at a goal or coming to be in a certain result state are typically telic (Dowty 1979), suggesting that these particles and affixes all have in common some type of completive semantics independent of change-of-state or motion. In §2.3, we present other ways that path can be encoded with a manner verb across languages, and show that the options do not neatly divide languages along V-framed and S-framed lines.

2.1.2 Goal/path-marking XPs

Another common type of path satellite is represented by goal-marking XPs, including adpositional phrases and DPs marked by semantic cases (presumably sisters to V/V′), exemplified by the English *(on)to* goal PPs in (7) and the Finnish allative (*-lle*) and illative (*-hVn/seen/siin*) goal DPs in (8), each of which indicates the location at which the figure arrives at the end of the event.

(7) a. John ran to the store.

b. I went onto the balcony. (English)

(8) a. *Menen parvekkee-lle.*
go.PRES.1SG balcony-ALL.
'I am going onto the balcony.'

b. *Isä ajaa auto-n autotalli-in.*
Father.NOM drive.PRES.3SG car-GEN garage-ILL
'Father drives the car into the garage.' (Finnish; Karlsson 1983:108, 104)

Just like the affixes and particles discussed above, goal-marking XPs of this sort are not restricted purely to change of location, but can also be found indicating result states in various sorts of resultative constructions. For example, English *to* (as well as *into* and *onto*, etc.) can head XPs that add or further specify a result state for some action described by the main verb as in (9) (Beavers 2002), as can certain semantic cases in Finnish, including the translative case (*-ksi*) and occasionally the illative case (Karlsson 1983, Fong 2003).

(9) a. Ted scrubbed/polished his shoes to a sombre shine.
b. James rubbed the finish to a dull luster. (English)

(10) a. *Ravist-i-n mato-n puhtaa-ksi*
shake-PAST-1SG carpet-GEN clean-TRA
'I shook a/the carpet clean.'
b. *Käte-en tuli haave.*
hand-ILL came wound.NOM
'The hand was wounded' (lit. 'Into the hand came a wound')
(Finnish; Fong 2003:(10), Karlsson 1983:104)

Familiar from the literature on motion events across languages is the observation that path-encoding XPs such as those in (7)-(8) are not typically found in V-framed languages marking goals with manner verbs (Talmy 1975, 1985, 1991, 2000). This is shown by the relative unacceptability of such constructions in the V-framed languages Japanese, Spanish, French (data from Beavers in press a), and Korean (though we discuss some counterexamples to this in §6):

(11) a. **John-wa kishi-ni/de oyoida/tadayotta/hatta.*
John-TOP shore-to/at swam/drifted/crawled
'John swam/drifted/crawled to the shore.' (Japanese)
b**?La botella flotó a la cueva.*
The bottle floated to the cave
'The bottle floated to the cave.' (Spanish)
c. **J'ai boité dans/à la maison.*
I-have limped into/to the house.
'I have limped into the house.' (French)
d. **Ku-nun ecey hakkyo-ey kel-ess-ta.*
he-TOP yesterday school-to walked.
'He walked to school yesterday.' (Korean; Im 2001:125, (94a))

In (11a) the Japanese postpositions *-ni* 'to' (often glossed as a dative; Kuno 1973) and *-de* 'at' may not in general serve as goal-markers with a manner verb, nor may the Spanish preposition *a* 'to' or French *à* 'to' or *dans* 'in' (note that *-de*, *en*, and *dans* do have pure location readings, i.e. the event occurred at the designated location, a reading that is irrelevant here). This correlates as well with the lack of secondary result predication (Aske 1989, Talmy 1991, 2000, Snyder 1995a,b, Song 1997, Washio 1997, Folli and Ramchand 2002, Beavers in press b), as shown for example for Japanese in (12) (cp. to the English translation with either an adjectival or PP result phrase).[2]

[2]Japanese shows something like a resultative construction, but only when the result XP further specifies the result state already encoded in the verb, as in (i).

(12) **John-ga kinzoku-o petyanko-ni tatai-ta.*
John-NOM metal-ACC flat-DAT pounded-PAST
'John pounded the metal flat/to flatness.' (Japanese; Washio 1997:5, (16b))

We argue below that this correlation is not arbitrary, and in fact plays crucially into why languages such as Japanese and Romance do not typically show S-framed encoding options. We return in §2.3 to a category of exceptions to this generalization which show that the encoding options available in canonical V-framed languages are wider than typically assumed, but the following section will first present the other side of the classical typological picture: when the verb encodes a path.

2.2 The verb encodes path: Canonically cited patterns

In this section we examine directed motion constructions involving a single verb expressing path. In such constructions, specifications of manner must be expressed via a satellite. As far as we are aware, in all languages that have path-encoding verbs, manner can be expressed via a subordinate clause, often headed by a participle based on a manner verb. This is considered characteristic of V-framed languages in particular, as shown here for Spanish, French, and Japanese.

(13) a. *La botella entró a la cueva (flotando).*
the bottle entered to the cave floating
'The bottle entered the cave (floating).' (Spanish)

b. *Je suis entré dans la maison (en boitant).*
I am entered in the house in limping
'I entered the house (limping).' (French)

c. *John-ga hashitte ie-ni haitta.*
John-NOM running house-to moved-in
'John ran/walked into the house.' (Japanese; Inagaki2002)

In (13a) the participle *flotando* 'floating' indicates the manner of motion for the path verb *entrar* 'enter', in (13b) *en boitant* 'in limping' (a preposition with a participle complement) indicates the manner of motion for the path verb *entrer* 'enter', and in (13c) *hashitte* 'running' indicates the manner of motion for *hairu* 'enter'. Gaines (2001) describes the use of subordinate clause strategies for expressing manner of motion with path verbs in four Bantu languages (Gikuyu, Swahili,

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i. *Mary-ga doresu-o pinku-ni some-ta.*
Mary-NOM dress-ACC pink-DAT dye-PAST
'Mary dyed the dress pink.' (Japanese; Washio 1997:5, (13b))

Crucial to our argument, this phenomenon again has a parallel in motion constructions, since goal XPs are possible in Japanese (and other V-framed languages) with path verbs, which presumably select for them (or at least entail their existence) in much the same way that change-of-state verbs select for or entail a result state:

i. *John-wa eki-made/ni itta/modotta/orita.*
John-TOP station-until/to went/went.up/went.down
'John went/went up/went down to the station.' (Japanese)

Thus, again there is a correlation between how path is encoded and independent constraints on the encoding of results.

Tswana, Zulu), noting differences among these languages with respect to the markers of subordination involved and the degree of similarity that a subordinate clause bears to a finite clause; he also notes that Swahili has a comparable strategy involving an infinitival form of the manner of motion verb.

As far as we are aware, nearly all languages have path verbs of some sort (though there are a few exceptions, e.g. Russian, classified as a strongly S-framed language in previous work, appears to lack path verbs entirely; Slobin 2004b:227). Likewise, nearly all of the languages we have examined so far allow for manner to be expressed as a (typically deverbal) satellite (cf. the English translations of (13), showing that this behavior is available in putative S-framed languages as well). Indeed, it appears that to the extent that any language has path verbs, it should exhibit V-framed encoding options, calling into question the notion of wholly distinct V-framed and S-framed language types. (We discuss how a language's lexical inventory correlates with its motion encoding options further in §7.)

There is another strategy for expressing manner as a satellite that does not involve some form of a verb. Wienold (1995) discusses uses of ideophones in Japanese, Korean, and Thai for expressing manner as a satellite. For example, in Japanese many different manners of walking can be encoded by the ideophones in (14) when modifying the verb *aruku* 'walk' (Wienold 1995:320, Table 8).

(14)

Ideophone	**Verb**	**Gloss**
yochiyochi	*aruku* 'walk'	to toddle, to totter
yoboyobo	*aruku*	to totter, to stagger
sutasuta	*aruku*	to walk briskly
burabura	*aruku*	to stroll
tobotobo	*aruku*	to trudge along, to tread on
shanarishanari	*aruku*	to walk daintily

Mandarin also employs reduplicative, or partially reduplicative adverbials to encode manner. Like the ideophones in Japanese, these manner adverbials can modify either manner verbs as in (15a), path verbs as in (15b), or manner+path V+V compound as in (15c).

(15) a. *tā yì guǎi yì guǎi de zǒu le jǐ bù*
(s)he one limp one limp MOD walk ASP few step
'(S)he limped a few steps.' (lit. walked a few steps limpingly.)

b. *tā diēdiē zhuàngzhuàng de jìn le jiàoshi*
(S)he fall-REDUP collide-REDUP MOD enter ASP classroom
'(S)he stumbled into the classroom.' (lit. entered the classroom stumblingly.)

c. *tā niè shǒu niè jiǎo de zǒu-jìn jiàoshi*
3sg restrict hand restrict foot MOD walk-enter classroom
'(S)he walked into the classroom gingerly (i.e. tiptoed into the classroom). (Mandarin)

Other adverbials available include *chànchàn wēiwēi* 'tremblingly, unsteadily', *bèngbèng tiàotiào* 'hopping and jumping', *sèsè suōsuō* 'shrinkingly', and even some that indicate an accompanying sound of motion, e.g. *huán pèi dīng-dōng* 'bangle pendant tinkling, i.e. with the tinkling of jewelery'. Of course, the categories that encode manner outside of the main verb are quite different from those that encode path. The former tend to be verb modifiers which are purely adjuncts,

whereas the latter tend to be result state or aspectual-class changing elements, since the addition of a path specification is often concomitant with the occurrence of change-of-state semantics. This is consistent with Talmy's (2000:217ff) proposal that S-framing is, in a larger sense, about applying aspectual and spatial structure (the "framing event") to the larger event (the "macro event"). However, ideophones (and adverbials at large) are of course not exclusive to the domain of motion. For example, Wienold (1995:320, Table 7) gives the following examples of ideophones with the Japanese verb *naku* 'cry':

(16)

Ideophone	**Verb**	**Gloss**
waawaa	*naku* 'cry'	cry
mesomeso	*naku*	weep
kusunkusan	*naku*	sob
oioi	*naku*	blubber
shikushiku	*naku*	whimper
hiihii	*naku*	pule
yowayowashiku	*naku*	mewl

So like path encoding, manner of motion encoding options correlate with larger, motion-independent patterns of manner encoding. What is crucial here is that the widespread availability of the V-framed option in so many languages complicates the notion of a clean S-framed vs. V-framed dichotomy, something not often discussed in the typological literature. Summarizing more generally, in this section so far we have shown that, focusing just on clauses that have one verb, the possibilities for encoding directed motion events are more diverse than typically assumed. Regardless of whether path or manner is encoded in the verb (the only clause obligatory category that can encode both), most languages have some means of encoding the remaining category via some type of satellite, such that most languages represent mixed types, though these encoding options invariably involve resources that are also used in the description of events outside the motion domain.

2.3 Consequences for "categorizing" languages: Further strategies

The preceding subsections have introduced a range of constructions with a single verb that can encode motion events, which are compatible with Talmy's typology. In this subsection, we examine further data for motion encoding with a single verb that raise questions for the typological approach. These data show that if we consider a slightly wider range of satellite expressions and pay attention to certain contextual factors, not only do typical S-framed languages show V-framed behavior, as we have already shown, but even very typical V-framed languages may show S-framed behavior.

2.3.1 General event delimiters

In many languages, including many putative V-framed languages, adpositions meaning 'until' may mark goals in directed motion constructions involving manner verbs (Beavers in press a). This is shown in (17) for S-framed English and V-framed French, Spanish, Japanese, Korean, and Turkish, where the main verb encodes the manner (verbs meaning 'float', 'drift', 'crawl', 'flow', 'walk', and 'jump') and the goal is expressed by an adposition meaning 'until' (cp. (11)).

(17) a. The bottle floated as far as/?until the cave. (English)

b. *La cire coule jusqu'au/*au bord de la table.*
The wax flowed until.at/at edge of the table
'The wax flowed to the edge of the table.' (French; Cummins 1996)

c. *La botella flotó hasta/??a la cueva.*
The bottle floated until/to the cave
'The bottle floated to the cave.' (Spanish; Aske 1989)

d. *John-wa kishi-made/*ni oyoida/tadayotta.*
John-TOP shore-until/to swam/drifted
'John swam/drifted to the shore.' (Japanese; Beavers in press a)

e. *Chelswu-nun hakkyo-kkaci kelessta.*
Chelswu-TOP school-until walked
'Chelswu walked up to the school.' (Korean; Im 2001:124, (93))

f. *Kaya-dan kaya-ya atla-yarak uc-a kadar gel-di.* (O. Kemal)
rock-ABL rock-DAT jump-PROG front-DAT until come-PST
'Jumping from rock to rock he came all the way to the front.'
(Turkish; Özçalışkan and Slobin 2003:(5), gloss by Hayriye Kayi)

Crucially, as discussed in Beavers (in press a), in these languages such markers invariably also may be found outside of motion constructions as indicators of various types of boundaries. For example, in Japanese the marker *-made* may describe various sorts of limits on events and objects, including temporal boundaries as in (18a), spatial boundaries as in (18b), numerical boundaries as in (18c), and temporal propositional boundaries as in (18d).

(18) a. *Ohiru-made kore-o shite-kudasai*
noon-until this-ACC do-please
'Please do this until noon.' (Temporal)

b. *Yuka-kara yane-made nan-meetoru arimasu ka?*
floor-from roof-until how.many-meters are QUES
'How many meters from the floor to the roof?' (Spatial numberal)

c. *Kono hooru-wa nisen-nin-made haireru.*
this hall-TOP 2,000-CL.people-until hold
'This hall can hold up to 2,000 people.' (Non-spatial numeral)

d. *Hikooki-ga deru-made robii-de tomodachi-to hanashite ita.*
plane-NOM leave-until lobby-at friend-with talking was
'Until the plane left I was talking with my friend in the lobby.' (Propositional)
(Japanese; cf. Kuno 1973:109-110, (1a),(6), Makino and Tsutsui 1986:226-228)

Thus, the *until*-phrases in (17) are not dedicated goal markers, but instead are markers of general delimitation, providing some boundary point on the event or object being described. However, when a motion event is delimited by a spatial bound, the *until*-phrase is interpreted as though it marks a goal, i.e. when a spatial bound is applied to a motion event it is interpreted by default as the goal of motion (see Beavers 2007 for further discussion). Nonetheless, this emergent property

is S-framed behavior, since the goal is being expressed by a satellite to the verb. But the data in (17b-f) are from putative V-framed languages. This suggests that even V-framed languages may show S-framed behavior in some contexts, once the right resources are examined.

However, an alternative perspective is suggested by Aske (1989), who argues that while these markers indicate a path, they do not entail "boundary crossing", i.e. actually coming to arrive at the goal. Aske proposes that Talmy's typology is sensitive to the encoding of "telic" vs. "atelic" paths, so that V-framed languages are constrained not to allow boundary-crossing path satellites with manner verbs, although they may allow non-boundary crossing path satellites (see also Slobin and Hoiting 1994, Martínez Vázquez 2001, Stringer 2001) . On this approach the contrast in the Spanish data in (19) follows: the locative/goal preposition *a* is unacceptable marking goals with manner verbs because it entails boundary crossing, while the prepositions *hacia* 'towards' and *hasta* 'until' are acceptable because they do not:

(19) a. *Juan nadó hasta/hacia/??a la costa.*
Juan swam until/toward/to the coast
'Juan swam to/toward the coast.'

b. *La botella flotó hasta/hacia/??a la cueva.*
The bottle floated until/toward the cave
'The bottle floated to/toward the cave.' (Spanish)

However, the status of Aske's (a)telic path distinction is unclear, at least with respect to this data. Most important, while markers such as *hacia* 'towards' do not entail arrival, *until*-markers such as *hasta* do entail arrival, e.g. in each example in (17) the figure does reach the goal. Thus, motion descriptions with *until*-markers are not compatible with contexts in which the figure does not reach the goal:

(20) a. *#Juan nadó hasta la costa, pero no llegó (a la costa).*
Juan swam until the coast, but not arrive (at the coast)
#'Juan swam to the coast, but never arrived.'

b. *#La botella flotó hasta la cueva, pero no llegó (a la cueva).*
The bottle floated until the cave, but not arrive (at the cave)
#'The bottle floated to the cave, but never arrived.' (Spanish)

It may be possible to argue that the *until*-expressions cited above do not entail moving beyond the basic perimeter defined by the goal (Dan Slobin, p.c.). However, there is other data which clearly entails boundary crossing; for example, in the Japanese example (21) the figure clearly ends up inside the cave, having crossed the boundary represented by the perimeter of the cave.

(21) *John-wa dōkutu-no naka-made oyoida.*
John-TOP cave-GEN inside-until swam
'John swam into the cave' (Japanese; Kiyoko Uchiyama, p.c.)

Thus, *until*-markers represent S-framed behavior: the verb encodes the manner and the (boundary crossing) path is expressed in a satellite to the verb—behavior inconsistent with previous typologies of motion events. We turn now to another way in which V-framed languages show S-framed behavior.

2.3.2 Applicatives

Languages may have other morphosyntactic resources that allow path satellites in the presence of manner verbs. Tswana (Bantu; Niger-Congo) has been classified as a V-framed language, and typically when a manner verb takes a locative complement, the complement is understood to specify the location of the event itself (Schaefer 1985). In (22a), for example, the running occurs in the area under the trees. However, the applicative morpheme *-ẹ̀l-* can be used to add a goal argument to a manner of motion verb, as shown in (22b); here the locative phrase is understood as specifying a goal: the figure ends up on the top of the mountain.

(22) a. *mò-símàné ó-kíbítl-à fá-tlàsé gá-dì-tlhàrè.*
CL 1-boy he-run heavily-IMP NEARBY-under LOC-CL 8-tree
'The boy is running with heavy footfall under the trees.'

b. *mò-símàné ó-kíbítl-***ẹ̀l***-à kwá-tlàsé gá-thàbà.*
CL 1-boy he-run heavily-**to**-IMP DISTANT-under LOC-mountain
'The boy is running with heavy footfall to the top of the mountain.'
(Tswana; Schaefer 1985:Table VI, (2), Table VII, (2))

In examples where the manner of motion verb has an applicative affix, the path is crucially expressed outside the verb: once again, this represents S-framed behavior occurring in a putatively V-framed language. Of course, applicative morphemes in Tswana (and many related languages) have a wider role than adding goal arguments, with Tswana itself using the applicative morpheme to signal benefactive and locative arguments as well (Cole 1955:201-203). Sitoe (1996) describes a similar applicativization strategy in another Bantu language, Tsonga. Indeed, the applicative morpheme is quite similar to the aspectual/result/goal affixes in Russian, which also sometimes license objects for which the verb is not normally subcategorized (see Spencer and Zaretskaya 1998:16ff).

2.3.3 Other S-framed patterns in V-framed languages

As discussed extensively by Talmy (2000:29, 49), the type of canonical S-framed behavior in §2.1.1 above is supposedly unattested in V-framed languages such as French, Spanish, or Japanese. However, at least one purportedly V-framed languages does show S-framed behavior of this sort: in present-day spoken Italian, a verb-particle construction is gaining ground, as documented by Iacobini and Masini (2006). [3] Among other things, an adverbial particle can be used to express a path with manner verbs as shown in (23) (other such particles include *fuori* 'out', *giù* 'down', *su* 'on', and the particularly prevalent *via* 'away'; Masini 2005, Iacobini and Masini 2006).[4]

(23) a. *Gianni è corso via subito dopo la partita.*
Gianni be.3SG run.PART.PAST away immediately after the game
'Gianni ran away immediately after the game.' (Italian; Masini 2005:153)

[3] Although we will not pursue this further, as we are not focusing on this facet of motion events, we point out that according to Ibarretxe-Antuñano (2004a,b), Basque, a V-framed languages, uses many of the rhetorical features in narratives that Slobin (1996, 2004a) had associated with S-framed languages. See Ibarretxe-Antuñano's paper for discussion of the significance of this observation.

[4] Italian adverbial particles also allow a path to be further or redundantly specified with path verbs, as in *uscire fuori* 'exit outside'; in addition, like their Germanic counterparts, they may assume metaphorical meanings, e.g. *buttare via* 'throw away' (either literally or metaphorically in the sense of 'squander'), and even non-compositional meanings, e.g. *fare fuori* 'kill' (literally 'do out') (Masini 2005).

b. *Luigi è saltato fuori all'improvviso.*
Luigi be.3SG jump.PART.PAST out suddenly
'Luigi suddenly popped up.' (Italian; Iacobini and Masini 2006:160)

Furthermore, these particles are coming to resemble English particles and Russian prefixes in also making aspectual contributions: they may serve as markers of telicity or atelicity depending on their literal meaning. The particle *via* 'away' in particular is being increasingly attested as a marker of telicity; for instance, it is being found quite productively in this function with verbs of surface contact: compare *graffiare* 'scratch' with *graffiare via* 'scratch off' (Iacobini and Masini 2008:180).

Moreover, certain pragmatic contexts may facilitate the use of certain S-framed options in V-framed languages, such as French, which is considered a 'strongly' V-framed language. The French preposition *dans* 'in', which in general allows only a locational interpretation, can occasionally be found in contexts where it is compatible with a goal interpretation, as the following data from Pourcel and Kopecka (2006:35) and Stringer (2003:46) show. These examples are considered less exceptional to most French speakers than the data in (11):

(24) *Il court dans le jardin.*
He runs in the garden
'He runs into the garden.' (French; Pourcel and Kopecka 2006:35)

(25) (In a context of a mother shouting to her children to come inside.)

a. *Allez, courons dans la maison!*
go-2PL, run-1PL in the house
'Come on, let's run in the house!'

b*?#Allez, entrons dans la maison en courant!*
go-2PL, enter-1PL in the house in running
'Come on, let's enter the house running!' (French; Stringer 2003:46, (7))

Here particular contexts can influence the availability of a certain encoding option. We return to such examples in more detail in §6; however, the fact that they are attested suggest that there in not a categorical ban on such constructions in these languages.

2.3.4 Path verbs in S-framed languages

Another option that remains unexplained on a typological approach is the availability of path encoding verbs in S-framed languages. English, for instance, has a wealth of path verbs. Some, such as *enter*, *exit*, *ascend*, and *descend*, are Latinate in origin and are more stilted than their compositional counterparts *come/go in/out/up/down*. Others, such as *rise*, *fall*, and *sink*, seem colloquial and indeed may not always be replaced by a verb plus satellite collocation. Nevertheless, deictic path verbs as *come* and *go* are no less path verbs than *enter* and *exit*, and deictic path verbs seem to be available across languages (with a few exceptions such as Russian, as noted above).

Similarly, Mandarin's classification as an S-framed language is taken to be uncontroversial. Yet in Mandarin, path verbs may be used, and with none of the stiltedness and level of formality that is sometimes associated with English verbs such as *enter* and *exit*. This is especially the case with change-of-location scenarios such as boarding and alighting a vehicle. So the sole path verbs

in (26a,c) are just as natural as the alternatives with the manner verb *tiào* 'jump' in (26b,d), and certainly far more natural than those with the manner verb *zǒu* 'walk' or *tà* 'step'.[5]

(26) a. *tā shàng-le chuán*
3sg go.up-Perf ship
(S)he boarded the ship.

b. *tā tiào/??zǒu/?tà-shàng-le chuán*
3sg jump/walk/step-go.up-Perf ship
(S)he jumped/??walked/??stepped onto the ship.

c. *tā tiào/??zǒu/?tà-xià-le chē*
3sg go.down-Perf vehicle
(S)he jumped/??walked/stepped down from the vehicle.

These facts are hardly unknown, yet both English and Mandarin are usually cited as well-behaved instances of S-framed languages. Indeed, Talmy (2000:27) stresses that his typological approach is intended to capture the colloquial, frequent, and pervasive patterns of motion encoding in a language. Yet however minor or infrequent a certain pattern may be in some language, if it is nonetheless an option, then an approach that accommodates it would seem preferable to one that does not.

2.3.5 Summary

Many languages exhibit properties of both V- and S-framed languages, tied to the particular morpholexical devices the language makes available. Some V-framed languages allow goal-marking via *until*-markers or applicativization, or even affixes and particles, i.e. unexpected S-framed options. Likewise, many S-framed languages appear to have path verbs, thus allowing V-framed encoding options. In addition, most of these options are not specific to motion constructions, but instead form a larger paradigm of motion-independent resources that have as one function use in motion constructions. Some of the data discussed in this subsection have been cited in direct response to the two-way typology proposed by Talmy. Some, such as the availability of path verbs in English, are familiar, but have hitherto not been raised as objections to the two-way typology. Yet it should be recognized that, just as the availability of S-framed options in a putative verb-framed language is problematic for the typological approach, the availability of verb-framed options in putative S-framed languages poses the same kind of question. These data suggest that it may be more useful to apply the terms V-framing and S-framing to individual encoding options rather than to entire languages.

3 Encoding directed motion with two or more verbs

In this section we turn to motion constructions that involve more than one verb. Languages that allow multiple verbs in a single clause are clearly not accommodated by the Talmy typology since they do not have the one-verb-per-clause restriction. Thus, it is not surprising that to account for such languages some researchers (Slobin 2004b, Zlatev and Yangklang 2004) have extended the Talmy typology by positing a third category of equipollently-framed languages. But, as we show, this category is not sufficient to capture all of the relevant data.

[5]Presumably, the naturalness of *tiào* 'jump' in this context is attributable to this action being taken to be the typical way of entering or exiting a vehicle in Mandarin. Although in English it is also quite usual to step into or off of a vehicle, the use of the comparable Mandarin verb, *tà*, has a much more literary flavor.

3.1 Serial verb constructions

Serial verb constructions (SVCs) have been the primary motivation for the class of equipollently-framed languages. SVCs allow for two or more distinct verbs per clause, some expressing manner and the others expressing path. Consider the following data from Emai (an Edoid language of Nigeria) and Thai, in which directed motion events are described by clauses in which both manner and path are expressed as a main verb:

(27) a. *ọli ọmọhe la o vbi oa*
the man run enter at house
'The man ran into the house.' (Emai; Schaefer 1986:181)

b. *chán dəən (paj)*
I walk go
'I am walking (away from the deictic center, towards something)'
(Thai; Zlatev and Yangklang 2004:165, (10))

In the Emai example (27a), the path is encoded by the verb *o* 'enter', while the manner is encoded by the verb *la* 'run', such that both components receive verb encoding. Likewise, in the Thai data in (27b) the path in each case is encoded via the deictic path verb *paj* 'go' and the manner by *dəən* 'walk'. This pattern is quite pervasive in Thai in particular, there are numerous examples of manner and path verbs occurring in series, invariably with the manner verbs coming to the left of the path verbs:

(28) a. *chán won jɔ́ɔn klàp khâw hɔ́ɔŋ.*
I circle reverse return enter room
'I returned circling back into the room.'

b. *chán dəən won klàp jɔ́ɔn khâw paj.*
I walk circle return reverse enter go
'I am walking in a circle, returning back inside.'
(Thai; Zlatev and Yangklang 2004:163-164, (6), (7))

However, the division of labor for expressing manner and path in equipollently-framed languages is not always so clear. For example, as Wechsler (2007) points out, in Thai not all path verbs necessarily encode arrival. The deictic path verb *paj* alone does not entail an arrival reading, and requires the presence of a verb such as *thŭŋ* 'arrive' to get this reading:

(29) *Piti dəən paj *(thŭŋ) rooŋrian mûawaanní nay welaa síp naatii.*
Piti walk go (arrive) school yesterday in time ten minute
'Piti walked to school in ten minutes.' (Thai; Wechsler 2007)

Thus, in a sense different types of path-related notions are encoded in different types of verbs, creating further possible distinctions among such languages. This 'spreading out' of path meanings is also pronounced in some Caribbean English Creoles (CEC), where directed motion events can be described by SVCs, but these SVCs only allow manner verbs to combine with deictic path verbs. The expression of non-deictic goal/path must be done via satellites (Winford 1990):

(30) a. *dem a waak a di striit*
they PROG walk to the street
'They're walking in the street.'

b. *dem go/kom/gaan (a maakit)*
they go/come/have.gone to market
'They go/come/have gone (to the market).'

c. *dem a waak go a maakit*
they PROG walk go to market
'They're walking to (the) market'

d. *dem ron kom in a di house*
they ron come in to the house
'They ran into the house'

e. *dem ron gaan a shap*
they run have.gone to shop
'They've run to the shop'

f. *Mieri swim-we gaan*
Mary swam-away have.gone
'Mary swam away' (CEC; cf. Winford 1990)

In each case the path verb is merely a deictic motion verb, *go* 'go', *kom* 'come', and *gaan* 'gone', and the goal/path is expressed by either a directional adposition (*a* 'to', *in a* 'into') or even an affix (*-we* 'away'). Thus, in at least some apparently equipollently-framed languages the path is spread out over multiple categories, rather than simply isolated in the verb or isolated in the satellite. This complicates the simple classification of languages with SVCs as equipollently-framed, necessitating further subdivisions of this category depending on what other resources are employed to encode path (even sometimes in the same clause).

3.2 Compound verbs

A natural question is whether there are other strategies for achieving equipollent framing in addition to serial verb constructions. A second class of languages which might arguably be classified as equipollently-framed are those that allow verb-verb (V+V) or verb-verb-verb (V+V+V) compounds in motion constructions. For example, Japanese (Yoneyama 1986, Wienold 1995) and Korean (Choi and Bowerman 1991, Wienold 1995, Kim 1997, Im 2001) generally exhibit a range of V+V compounds (and V+V+V compounds as well in Korean) both in and out of motion constructions (see for example Matsumoto 1996 on Japanese compounds in general). In motion constructions, V+V(+V) compounds may be formed in which one or more verbs encode path and the rest encode manner. Examples are given in (31) and (32).

(31) a. *John-wa eki-e hashitte-itta.*
John-TOP station-to running-went
'John ran (in)to the station.'

b. *John-wa kishi-e oyoide-itta.*
John-TOP shore-to swimming-went
'John swam to the shore.' (Japanese; Yoneyama 1986)

(32) a. *Ku salam-i cip-ulo ttwui-e tul-e kassta.*
that person-SUBJ house-to run-C(ONNECTIVE) enter-C went
'That person ran into the house.'

b. *Ku salam-i cip-ulo ttwui-e kassta.*
that person-SUBJ house-to run-C went
'That person ran to the house.' (Korean; Slobin and Hoiting 1994)

In the Japanese examples in (31) each V+V compound consists of a (deictic) path verb preceded by a manner verb, such that both components are encoded verbally. Likewise, the compounds in the Korean examples (32) compound consist right-to-left of a deictic path verb, a non-deictic path verb (optional), and a manner verb. Arguably, these constructions represent equipollently-framed behavior.[6] Crucially, however, in cases where compounding is *not* employed, both Japanese and Korean are characteristically V-framed languages, i.e. one cannot in general combine a path satellite with a manner verb, as shown again in (33) (with the exception of *until*-markers, discussed above).

(33) a. **John-wa kishi-ni oyoida/tadayotta.*
John-TOP shore-until/to swam/drifted
'John swam/drifted to the shore.' (Japanese; Beavers in press a:(1a))

b. **Ku-nun ecey hakkyo-ey kel-ess-ta.*
he-TOP yesterday school-to walked.
'He walked to school yesterday.' (Korean; Im 2001:125, (94a))

Why two equipollently-framed languages should also exhibit V-framed properties is not obvious from a three-way typology. Rather, these data suggest that compounding languages, and perhaps SVC languages as well, may straddle two different categories. From these data on serial verb and compounding languages, it is clear that even in a three-way typology things are blurred: languages may be generally V- or S-framed in non-equipollently-framed contexts even when the language allows equipollently-framed encoding, and some SVC languages exhibit mixed behavior even in equipollently-framed encoding. Neither property can be captured by simply positing a third typological category.

4 Equipollently-framed single verbs: Bipartite verb roots

There is a third language type that allows a single verb encoding option which nevertheless represents a form of equipollent encoding of manner and path; this dual characterization warrants classifying this form of motion event encoding outside the one vs. multiple verb classification surveyed in the last two sections. These languages include those that involve multiple verbal roots combining

[6]It is somewhat debatable that these constructions are equipollent, since in particular one could argue that the rightmost verb (which bears tense/aspect information for the whole clause) is the main verb and the verbs to its left (which in Japanese bear the participial *-te* affix and in Korean the connective affix) are subordinate. Thus, whether this data illustrated equipollent framing may hinge on how one analyzes compounds.

to form a single verb. In particular, DeLancey (2003, 2005) discusses Klamath (a Plateau Penutian language of southern Oregon), in which the type of Ground (the location in terms of which the path is defined) is encoded in what DeLancey calls Locative-Directional Stems (LDSs), which he argues to be verb stems encoding motion and/or location/ground. Any motion (and location) verb must contain an LDS. In addition to an LDS, a verb also contains an initial element which may correspond to a stem encoding a manner of motion (34)-(35).In the Klamath examples below from DeLancey (2003:74) and DeLancey (2005:194), we follow DeLancey's conventions in indicating LDSs and their glosses with boldface type.

(34) a. *hol***hi** '*run* **inside**'
b. *hol***?aal'***a* '*run* **into the fire**'
c. *hon***neeg***a* '*run* **into a hole**'
d. *how***wa** '*run* **into water**'

(35) a. *kc'i***Lii** '*crawl* **inside**'
b. *kc'i***diil***a* '*crawl* **under**'

Interestingly, DeLancey (2003:72-73) notes that some of the Klamath LDS are developing aspectual functions. For instance, DeLancey cites that the LDS *el'G* 'down' can contribute "a completive aspectual sense reminiscent of English verb particles or Russian prefixed prepositions" (2003:73). If, as DeLancey argues, LDSs, like the manner of motion formatives, are also verb stems, bipartite verbs instantiate an equipollently-framed option, albeit one encoded in a single verb. This option, then, could represent a fourth type of motion event encoding; alternatively, it could be viewed as instantiating the equipollent option, but at a word or stem level. The important point is not that Talmy does not document this language type, but rather that, faced with the range of possibilities, a typological approach is in danger of having to posit a new class for each newly attested encoding option.

5 The role of morpholexical and morphosyntactic resources

The data surveyed in the previous section show a wide variety of encoding possibilities for motion events that do not fit comfortably into a two- or three-way typology. This survey also shows that some options for the expression of motion events involve one motion verb, while others involve two or more. The former were the focus of Talmy's work and the basis for his typology; the latter have figured in work that extends his typology. It is instructive to ask first why the number of verbs should play a role in determining the available encoding options for directed motion. We argue that a constraint like (1) (repeated here) may shed light on this question:

(36) Verb is the only clause-obligatory category that can encode either manner or path.

The requirement that a clause describing a motion event requires a verb is an instance of the more general requirement that all main clauses contain a verb (excepting copular constructions in some languages). Similarly, the constraint that the verb used in the description of a motion event may encode either manner or path (and possibly only one of the two) can be viewed as an instantiation of a more general constraint on how much and what type of semantic information can be packaged into the meaning of a verb. Following the model outlined in Levin and Rappaport Hovav (1991, 1992, 1995, 1998) (see also Dowty 1979, Pinker 1989, Grimshaw 2005), a verb's meaning can be thought of as being composed of two distinct facets. One is an event template,

built from a small, universal set of primitives (e.g. causation, process, change of state, change of location, existence), which represents the verb's basic event type. The second facet of meaning, and the one relevant here, is some idiosyncratic semantic material, now often referred to as the "root" (after Pesetsky 1995), which crucially distinguishes a verb from other semantically related verbs (i.e. in Harley's 2005 terms the root gives each verb its name; see also Levin and Rappaport Hovav 1998). Roots fall into a limited set of "ontological types"; two of the most important are manner—an indication of how a particular action is performed—and result—an indication of the result state or location of the action.

In terms of this, Levin and Rappaport Hovav (1991, 1992) and Rapport Hovav and Levin (in press) in particular have argued on independent grounds that it appears that roots are universally restricted primarily to encoding either manner or result, though perhaps not both simultaneously. However, a number of researchers have argued that the semantic categories of result and goal are in fact manifestations of a single more basic category, or perhaps are even reducible to one another. Such arguments are made primarily on the basis of similarities in the way that results and paths affect the aspectual properties of the predicate, including contributing telicity (Tenny 1987, 1992, 1994, Dowty 1991, Krifka 1998, Hay et al. 1999) and durativity (Wechsler 2001, 2005, Beavers 2002, 2006, 2007). A second similarity comes from argument realization, including a tendency for figures in motion and patient arguments to be realized as objects (Rappaport and Levin 1988, Dowty 1991, Baker 1997, Krifka 1998, Beavers 2006) and for path/result notions to be realized as obliques or via secondary predication, often using the same (types of) oblique markers, as discussed in §2.1. Indeed, this correlation was a key factor in work adopting the localist hypothesis (Gruber 1965, Lyons 1967, Anderson 1971, Jackendoff 1972, 1983, 1990, DeLancey 2000), although this earlier work was more reductionist in taking path as the basic notion. Thus, following the very common assumption that coming to be in/at a location is effectively like coming to be in/at a state, and vice versa, the semantic constraint in (36) is just an instance of Levin and Rappaport Hovav's more general constraint on possible verb meanings across languages, and does not need to be independently stipulated for motion verbs.[7]

[7]Although there is a restricted set of verb types, including result and manner verbs, it may not be the case that a verb may encode just one of motion or manner. In particular, Zlatev and Yangklang (2004) argue for a third class of "manner+path" verbs in Thai, including potentially *phlòo* 'pop out', *thalú* 'pierce', and *hòklú* 'trip and fall' (these differ from the verb complexes in Klamath discussed in §4 in that these are lexicalized rather than derived compositionally). They argue that these form a separate class on the basis of word order facts about Thai, wherein manner+path verbs in SVCs must occur after all of the manner verbs but before all the path verbs, evidenced by data such as (i):

(1) a. *chán dəən phlòo ʔɔ́ɔk paj*
I walk pop.out exit go
'I popped out, walking.'
b. **chán phlòo dəən ʔɔ́ɔk paj*
c. **chán dəən ʔɔ́ɔk phlòo paj* (Thai; Zlatev and Yangklang 2004:167-168, (17))

This constraint supposedly follows from a more general constraint that manner verbs occur before path verbs and path verbs after manner verbs, so that manner+path verbs are forced in the middle in SVCs. Whether this characterization of these verbs is warranted on independent semantic grounds is perhaps debatable, although if true, it would suggest that Levin and Rappaport Hovav's constraint is too strong. Nonetheless, what is most crucial to our discussion is that verbs are both clause obligatory and restricted to encoding primarily manner and result meanings; thus, we set the possibility of manner+path verbs aside for now.

Returning to motion descriptions, there are therefore two primary classes of options for the expression of a particular directed motion event in a given language regarding whether manner or path is encoded in the verb, each of which determines a different set of possible ways of encoding or combining manner and path together in the clause (we discuss a third possibility below):

(37) a. **Path as V:** If path is expressed in V for a given expression, then
   i. If the language has SVCs/compounding, manner may also be expressed as a V.
   ii. If the language has manner adverbials (ideophones, subordinate clauses, adverbs), these may encode manner.
   iii. etc.

b. **Manner as V:** If manner is expressed in V for a given expression, then
   i. If the language has SVCs/compounding, path may also be expressed as a V.
   ii. If the language has appropriate result satellites (affixes, applicatives, semantic cases, adpositions), these may encode path.
   iii. If the language has *until*-markers, these may encode path.
   iv. etc.

Relative to which component is encoded in the verb, the encoding of the second component depends on factors that are not necessarily specific to motion, but instead are drawn from more basic language-specific resources for combining manners and results together in a clause. For example, Romance languages and Japanese share a number of crucial properties regarding morpholexical and morphosyntactic inventories. Both lack applicative morphemes (cp. Tswana), "aspectual" affixes (cp. Russian), particles (Italian aside; cp. German), semantic case inventories (cp. Finnish), bipartite verbal stems (cp. Klamath), etc. Furthermore, and perhaps most crucially, as discussed in §2, both Romance languages and Japanese are known to lack secondary predication in general, as in resultatives (Green 1973, Aske 1989, Talmy 1991, 2000, Snyder 1995a,b, Song 1997, Washio 1997, Folli and Ramchand 2002, Beavers in press b). This in turn entails a general ban on path satellite encoding in Japanese and French.[8] Thus, from the survey of ways of encoding paths discussed in §2 and §3 and summarized in (37), there are only two possibilities common to both languages left for enocding path: path verbs and *until*-markers. Likewise, only two resources common to both languages are available for encoding manner: manner verbs and subordinate adverbial clauses. Both languages exploit all of these options.

Of course, we cannot necessarily predict which options will be available in a given language. For example, it could have been that neither Japanese or French, as a representative of the Romance languages, had *until*-markers at all (though we are not aware of such languages). Likewise, it could have been that both languages lacked path verbs, and indeed, as noted above, Russian appears by and large to lack a class of path verbs, so V-framed encoding options are not possible in this language. Furthermore, we also cannot predict which resources will be employed for encoding motion events among the ones that are available. Although Japanese allows *until*-markers to encode path, the availability of *until*-markers is not a sufficient condition for path encoding. For example,

[8]This ban can furthermore be analyzed in terms of a lack of a resultative construction (following Goldberg 1995, Goldberg and Jackendoff 2004) or the lack of an appropriate class of adpositional markers (what Beavers in press b refers to as allative markers).

not all English speakers accept the word *until* for realizing goals (cf. ??*John strolled until the park* meaning *John strolled to the park*, though some speakers do find this acceptable, including the first author of this paper). Furthermore, even if a particular resource is both available in the language and exploited in motion constructions, this does not predict *how* it is combined with other resources. Rather, the kinds of structures in which these resources are combined is a further factor that introduces variation (Bouchard 1995, Pustejovsky and Busa 1995, Cummins 1996, 1998, Song and Levin 1998). For example, we showed above that at least the following three combinatorial options are exploited by different languages for encoding manner and path together without using satellite path expressions:

(38)

Compositional Method	**Example Language**
Serial Verbs (e.g. V_{manner} V_{path})	CEC, Emai, Thai
Compound Verbs (e.g. V_{manner}+V_{path})	Japanese, Korean
Subordination (e.g. V_{path}+V_{manner}-part)	All languages?

Again, the possible options for encoding directed motion events are determined by general properties of a language; they are not specific to motion alone. For example, as discussed above, Japanese and Romance languages have very similar morpholexical inventories, supporting their common classification as V-framed languages. However, Japanese also independently allows the possibility of V+V compounds, while Romance languages lack such compounds altogether. Thus, despite their otherwise considerable similarity, this one typological difference determines a host of different encoding options between the two languages.[9] Provided the appropriate resources are available and exploited, a language may therefore show "mixed" encoding options. Interestingly, depending on the available resources, a language may even allow both canonical S- and V-framed directed motion constructions. For example, both English and Hebrew (the latter sometimes classified as a V-framed language; Slobin 2004b) have manner Vs, path Vs, manner adverbial participles, and goal adpositions, yielding both canonical encoding types, as shown in (39) and (40).

(39) a. The dog crawled into the doghouse.

b. The dog went into the doghouse crawling. (English)

(40) a. *ha-kelev zaxal la-meluna.*
the-dog crawled to.the-doghouse
'The dog crawled into the doghouse.'

b. *ha-kelev nixnas la-meluna be-zxila.*
the-dog entered to.the-doghouse in-crawl$_N$
'The dog entered the doghouse crawling.' (Hebrew; Itamar Francez, p.c.)

Indeed, a third possibility beyond (37) would be a seldom discussed case in which *neither* manner or path is in the main verb, and *both* are encoded as satellites if these options are available. English instantiates this option as in (41a) (cp. the more commonly discussed options in (41b,c)).

(41) a. John moved stealthily out of the bedroom. (manner=adverb, path=adposition)

[9]Indeed, Snyder (1995a,b) has argued that the more basic typological parameter of compounding itself determines a host of other properties in a language, including even the possibility of resultatives, though a discussion of this connection is beyond the scope of this study.

b. John stole out of the bedroom. (manner=V, path=adposition)

c. John left/exited the bedroom stealthily. (path=V, manner=adverb)

This follows simply from the available resources in English, here the extent of its lexicon in terms of path, manner, and pure motion verbs, plus result and manner satellites. Thus, the encoding possibilities for different languages vary depending on the variety of path and manner encoding options available (taken from a larger set of manner and result encoding options) combined with the compositional processes for putting these pieces together, relative to independent facts about how those resources are exploited in a given language. The result is a more variable picture of motion encoding both within and across languages. Languages will share similarities in how motion is encoded only in as much as they share types of manner/result encoding resources and combinatorial processes. We should not then expect a small number of language types with respect to motion constructions, but rather as many types of languages as there are types of relevant resources, and indeed the data discussed in the preceding sections attests to this fact. In the next section we expand this approach to include non-grammatical factors that contribute to motion encoding.

6 Locations understood as goals: The role of pragmatics

Studies of English and some other languages have pointed out that in some circumstances locative phrases can be understood as goals, rather than locations, both with directed motion verbs and manner of motion verbs; see Nikitina (in press) and Thomas (2004) on English, Tungseth (2004) on Norwegian, Israeli (2004) on Russian, and Nedashkivska (2001) on Ukrainian. In English, for example, the locative prepositions *in* and *on* are generally not used as goal-markers (cp. *into*/*onto*), yet they may nonetheless receive goal interpretations in certain contexts, as in (42):

(42) a. (In a context of standing just outside a room)
John walked in the room.

b. (In a context of standing next to the bed)
Kim jumped on the bed.

The studies of this phenomenon suggest that locative phrases are understood as goals precisely in contexts that allow a reader or hearer to draw an inference that such an interpretation is intended. Nikitina (in press), based on an extensive corpus study, argues that various contextual factors determine when *in* can be understood as *into* in English. For example, as indicated, the examples in (42) may receive a goal interpretation in the context of John standing just outside the room or Kim standing next to the bed. The same sentences are less likely to have this reading in a context where John or Kim is standing some distance from these locations (e.g. down a long hallway):

(43) a. (In a context of standing down the hallway from a room)
#John walked in the room.

b. (In a context of standing down a hallway from the bedroom)
#Kim jumped on the bed.

Related to this, Nikitina points out that verbs that are inherently punctual and thus naturally describe a transition are more likely to be found with *in* phrases understood as goal phrases than verbs that describe a process. In particular, *in* is found less often with manner of motion verbs (which tend to describe durational processes) than with directed motion verbs (which are more

likely to allow punctual, transitional readings); see also Thomas (2004).[10] Turning to the types of complements of the preposition, *in* is found more often with "containers"—location NPs that have well-defined boundaries, such as rooms, pools, boxes, and cars—than it is with "areas"—locations that lack such boundaries, such as forests, neighborhoods, fields. As Nikitina points out, it is more plausible to infer a punctual transition into a container than an area, thus, allowing for a focus on the result location, rather than the extended path of motion.

If this phenomenon arises due to contextual support, we would not expect it to be restricted solely to S-framed languages—that is, to the languages where one could perhaps argue that these prepositions have lexical meanings that are not specified for directionality and thus are compatible with directional interpretations in certain contexts. In fact, it is not. Pourcel and Kopecka (2006:35) and Stringer (2003:46) note that in French it is also possible to use the location marker *dans* on a goal-marking interpretation, given the right context, as shown in (44) and (45), where (surprisingly) the "non-canonical" use of *dans* in (45a) is actually more natural sounding than the equivalent "canonical" V-framed expression of the same meaning in (45b) (cf. the oddity of the English translation as well) (repeated from §4).

(44) *Il court dans le jardin.*
He runs in the garden
'He runs into the garden.' (French; Pourcel and Kopecka 2006:35)

(45) (In a context of a mother shouting to her children to come inside.)

a. *Allez, courons dans la maison!*
go-2PL, run-1PL in the house
'Come on, let's run in the house!'

b*?#Allez, entrons dans la maison en courant!*
go-2PL, enter-1PL in the house in running
'Come on, let's enter the house running!' (French; Stringer 2003:46, (7))

Kopecka (2007) reports on an in-depth corpus study examining the factors favoring such phenomena in French, a V-framed language. Her study confirms that the factors that Nikitina identified as relevant in English also matter in French. For instance, as shown in the examples in (44) and (45), *dans* 'in' is more likely to be understood as *into* with locations that can be viewed as delimited—that is, as being "containers" rather than simply "areas". Although Kopecka limited her study to ten manner of motion verbs, she found that the manners of motion most likely to produce displacement rather than motion at some location were the ones most likely to be found with locative phrases understood as goals. This is consistent with Allen et al.'s (in press)) observation that verbs of manner of motion can be subdivided into those that describe forms of motion that necessarily produce displacement to some goal, such as running, walking, flying, and perhaps jumping and rolling and those that do not, such as dancing or strolling. The first type of verbs involve manners of motion characteristic of animate entities. These manners are typically used with the intent of reaching a goal, suggesting that such verbs may indeed at least implicate a notion of path. These observations are confirmed in a corpus study by Martínez Vázquez (2001) which looks systematically at the

[10]More generally, Beavers (2007) discusses the durational/punctual distinction of change of state and motion predicates and suggests that this distinction is intimately tied to properties of the result/goal denoting expression and properties of the manner involved in the event; see also Beavers (2002), Wechsler (2005)

range of semantic subclasses of motion verbs in Spanish to determine whether they may be found with goal phrases, despite Spanish's V-framed status. Although this study reports on all types of goals, including those expressed with event delimiters, it cites a fair number of corpus examples that involve locative prepositions such as *a* with goal interpretations, typically found with verbs of the appropriate manner of displacement type:[11]

(46) a. *... deslizándose a las habitaciones de las bailarinas...*
slipping to the room of the dancers
'... slipping into the dancers rooms...'

b. *Se arrastró a su lado...*
3SG crawled to her/his side
S/he crawled to her/his side...'

c. *... saltó a su lado.*
jumped to his/her side
'... s/he jumped to his/her side.'

d. *... volaron a Mar de Plata ...*
flew to Mar de Plata
'... they flew to Mar de Plata ...'
(Spanish; Martínez Vázquez 2001: 51-52, (101)-(102), (104), (106), (112))

Stringer (2003, 2006) notes a similar set of data in Japanese, also involving manner verbs that may implicate displacement of some sort and that also show up with goal PPs (marked by *-ni*), although he notes that the judgments are variable and somewhat muddled (see Beavers in press a for further discussion of these data):

(47) a. *?(?)Akira-wa umi-no-naka-ni jampu-shita.*
Akira-TOP sea-GEN-inside-to jump-did
'Akira jumped into the sea.'

b. *Ishi-?(?)ni/ishi-no-tokoro-?ni jampu-shita.*
rock- to/rock-GEN-place-to jump-did
'(He) jumped on the rock.'

c. *?(?)Soto-ni nigeta.*
outside-to fled
'(He) fled outside.'

d. *?(?)Hidari-ni tobu.*
left-to leaps
'(He) leaps to the left.' (cf. Stringer 2003:46, (5), (35))

[11] Spanish *a*, unlike its French and Italian cognates, primarily has directional rather than locational uses. It is likely that this property arose as several more specific locational prepositions and/or relational nouns have taken over this historic functionality (e.g. *en* 'in', *a lado de* 'near', *dentro* 'inside'). However, *a* does still have some locational uses, cf. *a las doces* 'at twelve', *al punto de* 'at the point of', suggesting that it still carries some purely locational semantics.

(48) a. *?(?)Akira-wa umi-no-naka-ni hashitta.*
Akira-TOP sea-GEN-inside-to ran
'Akira ran into the sea.'

b. *?(?)Eki-ni hashitta.*
station-to ran
'(He) ran to the station.'

c. *Eki-no-naka-ni hashitte-itta/?(?)hashitta.*
station-GEN-inside-to running-went/ ran
'(He) went running into the station.' (cf. Stringer 2003:46, (5), (9), (10))

It appears then that no matter what the language type, a pragmatic inference of directed motion can arise when factors conspire to make it possible. We cannot give a full account of the pragmatic factors that determine how such interpretations emerge, however, a theory of motion encoding must be flexible enough to allow them. An approach such as ours more easily accommodates the use of inference to attribute goal interpretations to locative expressions than an explicit typology, since we make no predictions about the presence or absence of such interpretations beyond the fact that putatively V-framed languages tend to lack lexicalized path-encoding satellites. However, nothing rules out the possibility that some set of interpretive processes may allow locative adpositions to take on such meanings in a given context. In the next section we return to Talmy's typology and show that even though the possible language types arises from motion-independent properties of languages, we might still expect two or three apparently major language types to emerge.

7 Conclusion: Revisiting Talmy's typology

We have argued that the range of attested cross-linguistic diversity in how motion is encoded points towards a much richer typology of languages than is typically assumed. However, the possibilities within a given language for encoding the notions of manner and path of motion, and for combining the two into a single clause, are not arbitrary. Rather, the options exploited in a given language are drawn primarily from more general manner and result encoding resources, such that the diversity in motion encoding can effectively be reduced to more basic typological diversity. In this section we return to typologies in the Talmy tradition, and suggest that while such typologies may not actually underlie the differences across languages, they may be a by-product of the interaction of the more basic typological properties with factors affecting how these resources are used.

Although a given language may have multiple options available for encoding manner and path, some options may be preferred to others on independent grounds, for example due to processing complexity or markedness or due to tendencies within the lexical inventory of a language to favor certain types of lexemes over others. Starting with markedness and processing complexity, options that are less marked or easier to process will presumably be preferred in contrast to more marked options, a fact which might make a language appear to have a more limited set of options available than it actually has. Consider, for example, (49), which includes a variety of acceptable descriptions of an event of John running to the station in which both manner and path are encoded:

(49) a. *John-wa eki-ni itta.*
John-TOP station-to went
'John went to the station.'

b. *John-wa eki-ni hashitte-itta.*
John-TOP station-to running-went
'John went running to the station.'

c. *John-wa eki-made hashitta.*
John-TOP station-until ran.
'John ran to the station.'

d. *John-wa hashitte eki-ni itta.*
John-TOP running station-to went
'John went to the station running.' (Japanese; Yoneyama 1986:(4))

Presumably on grounds of structural complexity, (49a) is the least marked description of this event since it involves a path verb that entails or selects for the goal PP. The options in (49b,c) are more complex, involving a complex V on the one hand and an adjunct PP on the other (plus the limit/goal inference discussed in §2.3.1). The former is presumably preferable, being a lexical operation.[12] The option in (49d) is presumably the least preferable option, involving a subordinate adverbial. This predicts that Japanese should favor V-framed encoding, with tendencies towards equipollent encoding. On the other hand, Romance languages have a similar spectrum of options minus the equipollent one, predicting more canonical V-framed status. Similarly, the English example in (41) (repeated here) shows diverse ways of combining manner and path together, though the same interrelationships apply:

(50) a. John moved stealthily out of the bedroom. (manner=adverb, path=adposition)

b. John stole out of the bedroom. (manner=V, path=adposition)

c. John left/exited the bedroom stealthily. (path=V, manner=adverb)

All are grammatical options, though the canonical S-framed manner verb+path satellite in (50b) is presumably the least marked option (avoiding the complex manner adverbials required if manner is a satellite), thus explaining putative S-framed tendencies noted previously for English. Thus, the relative complexity of available options may favor certain options over others, creating tendencies across languages that have the appearance of more categorical constraints.

The relative markedness of an option in a language can be related to at least two more general factors. One is the issue of optionality, which is inherent in the verb/satellite contrast. Another is the shape of the verbal lexicon found in a language. We discuss each in turn.

Satellites of all types (path or manner encoding) are generally optional in a clause, unlike the main verb. Given their optionality, how often satellites are used to encode certain semantic components may depend on how inferrable these components are from context, and language users will presumably avoid them when possible, choosing verbs that permit omission of the satellite. For example, in their comparative study of manner encoding in English (S-framed) and Greek (V-framed), Papafragou et al. (2004) show that the frequency of manner encoding is dependent not just on language type but also on whether the manner in question was "inferrable" or "opaque". For example, given a scene of a man walking up the stairs (where walking is a canonical and thus easily inferrable way of someone going up stairs), English speakers tended towards using

[12] Alternatively, Matsumoto (1996) suggests that Japanese V+V compounds may form a closed class; if so, these may simply be lexicalized and no operation is involved at all.

manner verbs (with or without path PPs), while Greek speakers tended to simply use path verbs with no manner expression, as might be expected on a standard typological approach. However, when presented with scenes in which the manner was non-canonical (e.g. a plane flying over a barn upside down), the frequency of manner encoding (either through complex manner adverbials or manner verbs) increased quite significantly in Greek speakers. This suggests that there may be an overall tendency towards encoding options that avoid use of satellites, especially more marked satellites such as *until*-markers or subordinate clauses. These preferences may in turn move certain languages towards V- or S-framed encoding, even if other options are available.

Crucial in this, though, is the shape of the verbal lexicon of a given language, given that verbs have been the lynchpins both in previous typologies and in our approach. A language may tend towards certain types of expressions depending on having, for example, a greater number of path vs. manner verbs, despite nearly every language having at least some verbs of both types. In some ways a two- or three-way motion verb typology is too strong in that it cannot capture the range of variation in motion-encoding resources of a single type that is available cross-linguistically. A dramatic case in point is found in Talmy's discussion of the Hokan language Atsugewi (Northern California). Although Talmy proposed a two-way typology based on where the Path component was encoded, he also observed the variation arising from the other possible meaning components a verb could incorporate. Thus, he also classified languages according to the kinds of motion verbs frequently found in them. So in addition to languages using the Motion+Path (i.e. V-framed) and Motion+Manner (i.e. S-framed) options,[13] Talmy also noted the existence of Motion+Figure languages, where the verb also encodes the Figure participant (Talmy 2000:57-58), citing motion verb roots in Atsugewi for illustration. For instance, the verb root *-lup-* is glossed as "for a small shiny spherical object (e.g. a round candy, an eyeball, a hailstone) to move/be-located". This is presumably the case for most northern Hokan languages and for Navajo (Talmy 2000:60). Thus, although Atsugewi is still classifiable as an S-framed languages, it is S-framed in a different way from English due to the preponderance of Motion+Figure verbs.[14]

However, even the seemingly exotic Motion+Figure lexicalization pattern, for instance, is said to be exemplified in English by such verbs as *rain* and *spit*:

(51) a. It rained in through the room.
b. I spat into the cuspidor. (English; Talmy 2000:57)

The difference between English and Atsugewi, though, would be that in English this lexicalization pattern is the exception rather than the norm. In a similar vein, most languages provide basic verbs of directed motion such as *come* and *go*, but there is more variability in whether path verbs that encode further directional or orientational information, such as *approach* ('go towards'), or *enter* ('go in') would be available. Differences in verb inventory are even more pronounced for manner verbs. Most languages have available verbs describing very basic manners of motion like *walk*, *run*, *fly* and *swim*, but fewer also provide highly contentful manner of motion verbs such as *limp* 'walk in a limping manner', *jog* 'run for exercise (or) at a slow and regular pace', *waltz*

[13]The Motion+Manner class is actually subsumed under a more general Motion+Coevent class, which includes verbs of caused motion (Talmy 2000:27).

[14]Of course, Motion+Figure verbs go against the grain of (36) in that they introduce a third type of meaning that a verb may encode, though this type may be subsumable under one of the other root types proposed by Levin and Rappaport Hovav (1998).

'dance to a three-beat rhythm', and the like. It seems only to be expected that the encoding options preferred in a certain language would be those that could exploit its lexicon to the fullest.[15] Thus, Talmy's apparent typology results from numerous converging factors, including the overlap of path/manner encoding in V and the independent availability of various ways of encoding manners and paths we have focused on here, combined with preferences for certain non-verbal encoding possibilities over over others on extra-grammatical grounds. In this sense current typological approaches to the encoding of motion events fail to capture the full richness of motion descriptions cross-linguistically.

We have proposed instead that the wide variation falls out of very general constraints on how manner and path may be encoded in languages plus independent properties of the morpholexical and morphosyntactic inventories of particular languages. The classic Talmy typology itself may due to the fact that V may generally encode both manner and path but not both simultaneously. Comparable explanations may apply to other apparent typological differences between languages (cf. Hale and Keyser 1997, 1998, Koontz-Garboden 2005 on state-derived inchoatives/causatives, Harley 1995, 1997, Hoekstra 1995, Siewierska 1998, Snyder 1995a,b on the dative alternation, Folli and Ramchand 2002 on resultatives/goal expressions, Beavers 2005, 2006, in press b on argument/oblique alternations and argument realization patterns). Such explanations may have ramifications for work in linguistic relativity (cf. Slobin 1987, 1991, 1996, 1997, 2000, 2003, 2004b), since what have been taken to be distinct conceptualizations of motion events may simply reflect the relative frequency of certain options based on their availability and markedness in a given language, although we leave this question for future research.

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[15] An independent question is why languages tend towards certain types of lexicons, which may be a tendency to preserve the emergent typological status of a particular language; see Wienold (1995:323ff) for a discussion.

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