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Motion events again: Delimiting constructional patterns

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Motion events again: Delimiting constructional patterns

Abstract

Languages can be divided into two main types depending on how they express motion (Talmy 1991, 2000). Satellite-framed languages (S-languages; e.g., English, German, Polish) express path outside the verb root leaving the verb free to encode manner (e.g., *The bottle floated into the cave*), while verb-framed languages (V-languages; e.g., Japanese, Spanish, Turkish) lexicalize path in the verb root and manner in an adjunct (e.g., Spanish *La botella entró en la cueva flotando* ‘The bottle entered the cave floating’). However, recent works suggest that languages also exhibit *intratypological variation*, i.e., variation within the same typological affiliation (e.g., Filipović 2007; Lewandowski & Mateu 2016; Lewandowski & Özçalışkan 2019) as well as *intralinguistic variation*, i.e., variation within particular languages (Iacobini & Masini 2007; Stefanowitsch 2013). This paper aims to further delimit motion encoding patterns by focusing on the interplay between abstract argument structure constructions (Goldberg 1995), verbs, and directional satellites. Based on data from Germanic, Romance, and Slavic languages, we propose that (i) Talmy’s (2000) typology can be better accounted for in terms of verb-construction combinability constraints and (ii) intertypological, intratypological, and intralinguistic variability in the expression of motion can be regarded as a byproduct of the availability of particular verb-construction mappings in the world’s languages.

1. Introduction

Languages can be classified as either satellite-framed (S-language) or verb-framed (V-language) depending on where they characteristically express path—the framing component of a motion event (Talmy 1991, 2000). S-languages (e.g., English, German, Polish) express path in a satellite around the verb, leaving the verb root free to encode manner; see (1).

(1) *The bottle floated into the cave.*

(Talmy 2000: 49)

In contrast, V-languages (e.g., Japanese, Spanish, Turkish) lexicalize path in the verb root and manner in an optional adjunct; see (2).

(2) *La botella entró en la cueva (flotando).*

the bottle entered in the cave floating

‘The bottle entered the cave (floating).’

(*ibidem*)

Despite an expanding body of research on cross-linguistic variation in the lexicalization of motion from a variety of perspectives including variation between language types (i.e., *intertypological variation*; e.g., Allen et al. 2007; Berman & Slobin, 1994; Gennari et al., 2002; Hickmann et al., 2009; Naigles et al. 1998; Strömquist & Verhoeven, 2004; Zlatev & Yangklang 2004), variation within language types (i.e., *intratypological variation*; e.g., Croft et al. 2010; Fagard et al. 2017; Filipović 2007; Slobin 2004), and variation within particular languages (i.e., *intralinguistic*

variation; e.g., Aske 1989; Hendriks & Hickmann, 2015; Özçalışkan, 2000, 2005; Soroli & Verkerk 2017), many questions still remain unanswered, especially with respect to intratypological and intralinguistic variability.

In this paper, we aim to further delimit motion event encoding patterns by paying special attention to compatibility restrictions that emerge from the interactions between abstract argument structure constructions (Goldberg 1995), verbs, and directional satellites. In line with most typological studies on motion events, we mainly focus on the expression of self-motion (i.e., motion instigated by the figure itself; e.g., *enter the room*), even though we also point to some important differences between self- and caused-motion events (i.e., motion instigated by an external force, e.g., *push the chair into the room*), which open interesting avenues for research on motion event variability.

Following the idea that linguistic categories are not (necessarily) clear-cut (Lakoff 1972, 1987), we argue that the verbs participating in the expression of motion do not divide into two strictly delimited subclasses, that is, path verbs vs. manner verbs, but instead can be arranged along a scale with different degrees of directionality. Our proposal is also consistent with earlier efforts to show that manner verbs are not semantically homogeneous and that motion verbs do not follow a simple path vs. manner dichotomy (e.g., Aurnague 2019; Slobin et al. 2014; Stosic 2019, among others).

For example, the manner verb category is not monolithic: while verbs such as *dance* and *float* could be regarded as prototypical members of the manner category (*pure manner verbs*), other verbs such as *run* and *jump* are encyclopedically associated with some degree of directionality (*directional manner verbs*). Importantly, we will show that these associative aspects of meaning are relevant for a verb's ability to participate in the expression of directed motion. For

example, unlike pure manner verbs, directional manner verbs are occasionally allowed to conflate manner with motion in the main verb in V-languages; see (3).

(3) a. (...) escuchó un disparo y corrió a la habitación de los niños (...).

he.heard a shot and he.ran to the room of the children

‘(...) he heard a shot and ran to the childrens’ room (...).’

(Spanish; CREA; 1.8)¹

b. *Bailó a la habitación.

he.danced to the room

‘He danced into the room.’

(Spanish; Lewandowski 2014: 891)

Following earlier work by Lewandowski & Mateu (2016), we also show that the compatibility between verbs and directed motion constructions is further constrained by the morphological relation between the framing event (i.e., path) and the verb root. More specifically, the formal distance between these elements is correlated with the semantic distance between them—a pattern that is reminiscent of the proximity principle put forward in earlier studies on iconicity (e.g., Bybee 1985; Croft 1990). For example, despite a widely accepted binary division between V- and S-framing the S-framed pattern can be further divided in at least two subclasses, depending on the morphological status of the satellite. If the framing event is encoded in

¹ As will be explained in more detail below, the numbers indicated in brackets represent the frequency of a given constructional pattern in the corpus, normalized per 1,000,000 words.

morphologically bound prefixes (*prefix-framing*), the intransitive motion construction tends to reject manner of motion verbs that do not supply the notion of directionality (e.g., pure manner verbs such as *dance* or *float*). By contrast, when the framing event is encoded in morphologically free elements such as particles and prepositional phrases (*nonprefix-framing*), the construction accepts a broader range of verbs including pure manner verbs, thus resulting in greater semantic distance between the verb and the framing event; see (4).

(4) a. (...) *my father (...) danced into the kitchen.*

(Coca; 0.02)

b. **Mój ojciech wtańczył do kuchni.*²

my father into-danced to kitchen

‘My father danced into the kitchen.’

(Polish)

Finally, our study shows that the compatibility of motion constructions with verbs also interacts with event structure semantics. More specifically, the transitive caused-motion schema has the ability to combine with a broader set of semantic classes than the self-motion schema. Importantly, many of these verbs do not inherently lexicalize motion (e.g., *hack* as in *He hacked a piece off the block*). We will argue that one possible factor that explains this extended compatibility with verbs is the presence of an external force (i.e., the causer of the figure’s motion) which determines the initial point of the path and therefore adds the component of directionality

² All of the 12 consulted Polish native speakers rated (4b) as unacceptable.

to the constructional meaning, thus allowing the verb more flexibility to leave the motion component unspecified.

Based on our analysis, we conclude that (i) a typology of verb-construction mappings provides an empirically more adequate account of motion encoding patterns than a binary typology of languages as put forward by Talmy (2000), and that (ii) intertypological, intratypological, and intralinguistic variability can be regarded as a byproduct of the availability of particular motion constructions in a given language.

To illustrate our claims, we focus on three genetic families, namely Germanic (English, German), Romance (French, Italian, Spanish), and Slavic (mainly Polish). Our focus on these languages is dictated by both theoretical and practical reasons. On the theoretical side, these languages provide a highly relevant test bed for both intertypological (V-framed Romance *vs.* S-framed Germanic and Slavic), intratypological (Germanic *vs.* Slavic, both S-framed), and intralinguistic variation. On the practical side, the choice of these languages was motivated by our own linguistic skills. Even though our empirical base is unavoidably limited, the predictions set out in our study are essentially empirical and thus readily testable in future research that extends our work to other languages.

With respect to methodology, we rely on two main sources of evidence, namely (i) descriptions provided in previous studies, and (ii) corpus data (*Corpus of Contemporary American English*, <https://www.english-corpora.org/coca/>; *DeReKo* corpus of German, <https://korap.ids-mannheim.de/>; *National Corpus of Polish*, <http://nkjp.pl/index.php?page=0&lang=1>; *CREA* corpus of Spanish, <http://corpus.rae.es/creanet.html>). However, if the relevant information is not available in the extant studies and/or corpus, we also resort to (i) the Tenten corpora (i.e., a group of text corpora created from the Web; <https://app.sketchengine.eu/>) and (ii) native speakers'

acceptability judgments. Considering the primarily qualitative nature of our study no statistical tests were performed, leaving the analysis of frequency effects in motion encoding to a future publication (but see e.g., Pedersen 2016, 2019, for two recent quantitative accounts of lexicalization patterns in Spanish). But in order to give the reader an approximate notion of frequency patterns, for corpus examples, we computed the raw number of instances of a given constructional schema (e.g., *correr a* ‘run to’ as in [3a], *dance into* as in [4a], etc.) in the relevant source. Since the corpora used in our study are of different size, we normalized frequency numbers per 1,000,000 words. In addition, due to the large size of the corpora, we limited our search to the past tense forms of a given verb.

The organization of the present paper is as follows. We begin by providing an overview of the theoretical background of our study in Section 2. We first focus on Talmy’s (1991, 2000) typology of motion events (2.1) and then we turn to constructionist approaches to argument structure (2.2). Section 3 presents our data and identifies three types of framing, namely V-framing (3.1) and two kinds of S-framing, that is, prefix- and nonprefix-framing (3.2). With these data in hand, we redefine Talmy’s (1991, 2000) typology of languages as a typology of verb-construction mappings in Section 4. In Section 5 we extend our analysis to caused-motion events and address the effect of event structure differences between self- and caused-motion on verb-construction compatibility. Finally, we summarize our findings in Section 6.

2. Theoretical considerations

Two theoretical perspectives underpin this study, namely Talmy’s (1991, 2000) typology of motion events and Goldberg’s (1995) construction-based approach to argument structure. This section provides a brief overview of the key concepts of these theoretical frameworks. First, we discuss Talmy’s (1991, 2000) typology of motion events and identify data that have been regarded

as problematic for Talmy's (1991, 2000) generalization. Next, we turn to constructional theories of grammar, with special focus on the important distinction between verb meaning and constructional meaning put forward by Goldberg (1995).

2.1. Talmy's (1991, 2000) typology of motion events

The expression of motion has received a great deal of attention in recent scholarly work. As first noted by Talmy (1978), a motion event comprises four basic components, namely: (i) *figure*, i.e., the entity changing location, (ii) *ground*, i.e., a reference landmark for the location of the figure, (iii) *path*, i.e., the trajectory followed by the figure, and (iv) the *motion* itself. A motion event may also include *manner*, an additional component that conveys information about the way in which motion is performed. For example, the sentence in (1) repeated here as (5) encodes all the aforementioned elements: the figure (*the bottle*), the ground (*the cave*), the path (*into*), and motion conflated with manner (*floated*).

(5) *The bottle floated into the cave.*

The world's languages can be classified as either S- or V-languages depending on where they encode path (the framing event) and manner (the co-event). As is illustrated in (5), S-languages (e.g., English, German, Polish) express path in a satellite around the verb (i.e., *into*), leaving the verb free to lexicalize manner (i.e., *floated*). By contrast, as is shown in (2) repeated here as (6),

V-languages (e.g., Japanese, Spanish, Turkish) lexicalize path in the verb root (i.e., *entró*) and manner in an optional element outside the verb, e.g., a gerund (i.e., *flotando*).³

(6) *La botella entró en la cueva (flotando).*

the bottle entered in the cave floating

‘The bottle entered the cave (floating).’

(Spanish; Talmy 2000: 49)

Importantly, however, it is only in encoding boundary-crossing events that V-languages are required to express path in the verb root. For example, in (7) the conflation of manner with motion in the verb root is possible because the event does not involve the crossing of a bounded space.

(7) *La botella flotó hacia / hasta la cueva.*

the bottle floated toward up.to the cave

‘The bottle floated toward / up to the cave.’

(Spanish; Aske 1989: 3)

³ Strictly speaking, Talmy’s notion of satellite subsumes essentially particles and verb affixes, but *not* prepositions (Talmy 2000: 101-102). However, here we follow some of the later work (e.g., Beavers *et al.*, 2010; Croft *et al.*, 2010; Filipović, 2007), which extended the term *satellite* to include directional PPs such as *into the cave* as in (5); see the above-quoted references for further discussion.

Given that the binary split proposed by Talmy (1991, 2000) applies most strictly to boundary-crossing events (Aske 1989; Özçalışkan 2015; Slobin & Hoiting 1994), we will mainly (but not exclusively) focus on these kinds of situations in the remainder of our paper.

2.1.1. Apparent counterexamples

Following Talmy's (1991, 2000) proposal, earlier research gathered an increasing amount of evidence supporting a two-way classification of languages (e.g., Allen et al. 2007; Berman & Slobin 1994; Gennari et al. 2002; Hickmann et al. 2009; Naigles et al. 1998; Özçalışkan 2015; Strömquist & Verhoeven 2004). However, even though languages show preference for either V- or S-framing, recent work also suggests that languages show some degree of *intratypological variation*, i.e., variation within the same typological affiliation (see Goschler & Stefanowitsch, 2013, for an overview). For example, although Slavic languages such as Polish and Serbo-Croatian and Germanic languages such as English and German are categorized as S-framed, Slavic languages encode less specific manner dimensions in the verb root than Germanic languages (Lewandowski & Mateu 2016; Filipović 2007; Kopecka 2010; Koptjevskaja-Tamm et al. 2010). One explanation that has been given for this pattern of difference is a more diverse lexicon of manner of motion verbs in Germanic compared to Slavic (e.g., Kopecka 2010; Koptjevskaja-Tamm et al. 2010).

In addition, there is evidence that languages do not use their characteristic lexicalization strategy exclusively, indicating the co-existence of V- and S-framing within particular languages (i.e., *language-internal variability*). For example, even though V-languages such as Italian and Spanish are characterized as encoding path in the main verb, examples such as those in (8) appear to contradict this generalization, because the main verb encodes the manner component (see e.g., Iacobini & Masini 2007; Martínez-Vázquez 2015; Masini 2005; Pedersen 2014).

241

242 (8) a. *El marinero saltó del barco y nadó a la orilla.*

243 the sailor jumped from.the boat and swam to the shore

244 ‘The sailor jumped out of the boat and swam to the shore.’

245 (Spanish; Martínez-Vázquez 2015: 194)

246 b. *La gente è corsa fuori dallo stadio.*

247 the people is run outside from.the stadium

248 ‘The people ran out of the stadium.’

249 (Italian; Masini 2005: 153)

250

251 Similarly, although S-languages such as English and German typically conflate manner with
252 motion in the main verb, these languages also rely on a number of path verbs in constructions that
253 resemble the V-framed pattern (Lewandowski 2020b; Lewandowski & Özçalışkan 2018;
254 Stefanowitsch 2013).

255

256 (9) a. *The children exited the room.*

257 (Stefanowitsch, 2013: 229)

258 b. *Die Kinder verliesen (rennend) das Zimmer.*

259 the.nom children left running the.acc room

260 ‘The children left the room (running).’

261 (German, *ibidem*, 226)

262

In short, even though languages are predominantly V- or S-framed, the options available cross-linguistically for lexicalizing motion suggest the possibility of a more nuanced typology that expands the binary classification put forward by Talmy (1991, 2000).

2.2. Construction grammar: verbs vs. constructions

In constructionist approaches to language, grammar is assumed to be a structured inventory of constructions (a *constructicon*). Constructions are defined as conventionalized form/meaning pairings at different levels of complexity and schematicity (e.g., Bybee 2010; Croft 2001; Fillmore 1985; Goldberg 1995). In line with this definition, constructions comprise all levels of linguistic description including morphemes (e.g., *pre-*, *-ing*), simple words (e.g., *avocado*, *anaconda*), complex words (e.g., *daredevil*, *shoo-in*), idioms (e.g., *kick the bucket*, *spill the beans*), etc.

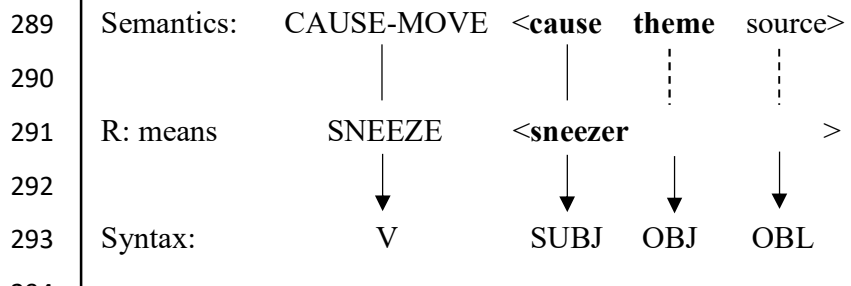
As proposed by Goldberg (1995), even schematic argument structures can be analyzed as form-meaning pairings with their own form and meaning.

More specifically, Goldberg (1995) argues that argument structure is not exclusively determined by the lexical specifications of the verb. Instead, schematic argument structures can exist independently from the conceptual contribution of the lexical items that instantiate them, thus contributing aspects of form and meaning that are not part of the verbs' semantics. Crucial in drawing this conclusion has been Goldberg's (1995) analysis of so-called *unselected object constructions*, i.e., patterns involving arguments that are not part of the verb specifications (Lewandowski & Mateu 2014; Rappaport Hovav & Levin 1998). For example, in sentences such as (10) the direct object is not licensed by the main verb because the intransitive verb *sneeze* involves only one participant, the subject (e.g., *Frank sneezed*). Therefore, concludes Goldberg (1995), the direct object is imposed by the abstract caused-motion construction with which the verb combines; see Figure 1.

286

287 (10) *Frank sneezed the tissue off the table.*

288



295 Figure 1. Goldberg's (1995: 54) analysis of (10)

296

297

298 The caused motion construction is composed of a cause, a theme, and a spatial reference point.

299 The cause corresponds to the instigator of movement and is coded as the subject. The theme

300 corresponds to the figure, i.e., the entity being moved, and is coded as the direct object. Finally,

301 the spatial reference point corresponds to the ground, i.e., the entity with respect to which the

302 figure moves, and is coded as an oblique argument. Prototypical examples of the caused-motion

303 construction are e.g., *John put the box into the room* and *John poured water into the glass*, because

304 the verbs *put* and *pour* involve three participants in their lexical semantics: the cause (subject), the

305 theme/figure (direct object), and a goal/ground (oblique). In contrast, *sneeze* does not intrinsically

306 specify the caused-motion event schema and, therefore, the argument structure specifications in

307 (10) are determined by the constructional template (see Goldberg 1995, Ch. 7 for a more detailed

308 analysis of the integration between verbal and constructional meaning).

309 Importantly, construction-based approaches to argument structure along the lines of

310 Goldberg (1995) propose that argument structure properties are independent from the conceptual

311 contribution of the verb and, therefore, multiple argument structure patterns are captured by

embedding a *single* verb meaning into different morpho-syntactic configurations that exist independently of particular verbs. This, in turn, avoids the problem of positing implausible verb senses. For example, in (10) *sneeze* conveys the same meaning of expulsion of air as it does in its prototypical intransitive use (e.g., *Frank sneezed*). But because the action of *sneezing* is capable of causing the displacement of an entity, this verb can integrate into the caused-motion construction thus contributing information about the means (manner in Talmy's terms) by which motion is performed. This view stands in stark contrast to the projectionist theories of the lexicon/syntax interface (e.g., Levin 1993; Levin and Rappaport Hovav 2001; Pinker 1989; Rappaport and Levin 1988), which emphasize the role of the lexical properties of the predicate in determining the syntactic structure of the sentence and therefore posit different meanings for each argument realization of a given verb. Thus, under this theoretical perspective, *sneeze* has at least two different senses: one corresponding to the intransitive pattern (i.e., *Frank sneezed*) and another corresponding to the caused-motion pattern (i.e., *Frank sneezed the tissue off the table*); see e.g., Mateu (2014) and Müller and Wechsler (2014), for two recent reviews of constructionist vs. projectionist approaches to argument structure.

2.2.1. The constructional make-up of self-motion events

Following Goldberg's (1995) distinction between verbs and constructions, we propose that variability in the encoding of motion can be fruitfully accounted for in terms of verb-construction mappings. Given that our main focus is on self-motion events, we should first offer a brief description of their structure. Self-motion events correspond to the so-called intransitive motion construction. Goldberg (1995: 160), without providing further details, represents the intransitive motion construction as in Figure 2.

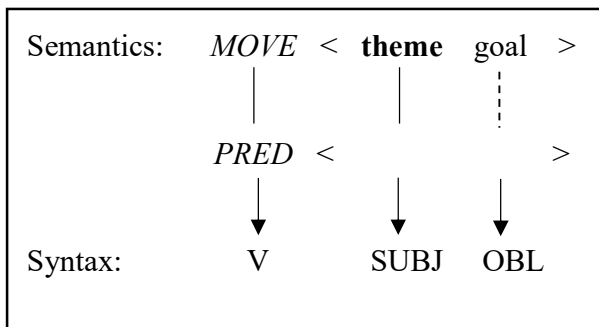


Figure 2. Goldberg's (1995: 160) representation of the intransitive motion construction

In the intransitive motion construction, the theme/figure is encoded as the subject, and the goal/ground as an oblique argument. As such, the constructional meaning can be characterized as “x moves with respect to y” where x corresponds to the subject (theme/figure) and y to the oblique argument (goal/ground).

Within this general constructional schema, the path component is distributed among different surface elements, depending on the type of framing. V-framed constructions encode path in the verb root itself; see (11).

(11) *La policía entró en el vestuario (...).*

the police entered in the locker.room

‘The police went into the locker room.’

(Spanish; CREA; 32.2)

In turn, prefix-framed constructions encode path in prefixes; see (12).

(12) *Anna wbiegła do szkoły.*

362 Anna w-ran to school.gen

363 ‘Anna ran into the school.’

364 (Lewandowski 2012: 441)

365

366 Finally, nonprefix-framed constructions encode path either in prepositions that introduce the
367 ground or in particles if the ground is omitted (e.g., Carroll, 2000; Harr, 2012; Talmy, 2000); see
368 (13) and (14), respectively.⁴

369

370 (13) a. *Four men in black ran into the room.*

371 (Coca; 6.7)

372 b. *Sie laufen in das Stadion.*

373 they walk in the.acc stadium

374 ‘They walk into the stadium.’

375 (German; Carroll 2000: 100)

376 (14) a. (...) *he looked like he was about to jump out.*

377 (Coca; 2.4)

378 b. *Die Frau springt heraus (...).*

379 the woman jumps out

380 ‘The women jumps out.’

⁴ See Filipović (2007: 33ff.) and Croft et al. (2010: 205ff.) for further discussion on the distinction between prepositions and particles in English. See also Harr (2012: 116ff.) and Lewandowski & Mateu (2016: 197ff.) for a comprehensive classification of path elements in German.

On one extreme are prototypical path verbs such as ‘enter’, ‘exit’, ‘cross’ which inherently specify the trajectory along which the figure moves. Next to these are directional manner of motion verbs such as ‘climb’, ‘jump’, ‘run’ which do not inherently encode path but display a certain degree of path salience. Directional manner of motion verbs are followed by pure manner of motion verbs such as ‘dance’, ‘float’, ‘flutter’ which do not evoke any specific directionality. The distinction between directional and pure manner verbs is based on the contextual knowledge associated with the lexical specifications of the verb (e.g., Fillmore 1977; Langacker 2008). For example, we know from our everyday experience that activities such as dancing, floating, fluttering, shaking, etc. do not necessarily imply a change of location, i.e., a figure can dance, float, flutter or shake without moving from one spatial point to another. In contrast, activities such as climbing, jumping, running, flying, etc. are typically associated with motion along a spatial axis. As a matter of fact, some of these activities may evoke more specific path configurations: e.g., a conventional climbing scenario involves upward motion, a conventional jumping scenario involves gravity-induced downward motion, etc.; see Lewandowski (2018), Broccias (2003: 36ff.); Fillmore (1982); Lakoff (1987: 20); Rohde (2001); Stosic (2019), for further discussion. Finally, on the right end of the continuum are nonmotional manner verbs such as ‘roar’, ‘rumble’, and ‘whistle’, which have the ability to specify the manner of motion but do not inherently lexicalize motion. Importantly, as will become evident, the position of the verbs on the scale of directionality is relevant to their argument structure behavior, with verb types located toward the right end of the continuum showing the most restricted compatibility with motion constructions and verb types located toward the left end of the continuum showing the least restricted compatibility with motion constructions.

3. Three types of framing

This section gives an overall perspective on the dimensions of variation in the expression of motion, with special focus on data that have been regarded as problematic for Talmy's (1991, 2000) typology. We first focus on V-framed constructions and then we turn to S-framed constructions, placing emphasis on the differences between prefix- and nonprefix-framing.

3.1. Verb-framed constructions

Canonical examples of V-framing are cases in which the verb inherently specifies the path of motion, while manner is encoded in an optional adjunct outside the verb; see the Spanish example in (2) and the Italian and French examples in (15a) and (15b), respectively.

(15) a. *La bottiglia entrò nella grotta (galleggiando).*

the bottle entered in.the cave floating

'The bottle entered the cave floating.'

(Italian; Cardini 2012: 169)

b. *Pierre est sorti de l'école en courant.*

Pierre is exited from the.school running

'Pierre exited the school running'

(French; Kopecka 2006: 85)

Languages classified as V-framed in Talmy's (1991, 2000) typology typically lack directional satellites and therefore resort to path verbs to indicate directionality (e.g., Beavers et al. 2009; Cummins 1996; Matsumoto 2018). For example, the Spanish repertoire of directional elements is particularly scarce, two notable exceptions being the non-boundary crossing prepositions *hacia*

453 'toward' and *hasta* 'up to' (Lewandowski 2014a,b; Fábregas 2007). As such, Spanish speakers
454 have no alternative but to lexicalize path in verbs such as *entrar* 'enter', *salir* 'exit', *cruzar* 'cross',
455 *subir* 'ascend', *bajar* 'descend', *llegar* 'arrive', *venir* 'come', *volver* 'return', etc. (e.g., Cifuentes-
456 Férrez 2008: 170ff.; Talmy 2000: 49-53; see also Verkerk 2014).

457 Importantly, however, nearly all S-language lexicons include path verbs too, thus allowing
458 their speakers to make use of the V-framed lexicalization strategy (Verkerk 2015). English, for
459 instance, has the well-known Latinate path verbs such as *enter*, *exit*, *ascend*, and *descend*, but also
460 path verbs of Germanic origin such as *rise* and *leave*; see (16) and (17), respectively.

461

462 (16) a. *The plane ascended to 30,000 feet (slowly).*

463 b. *The children exited the room (in a rush).*

464 (Stefanowitsch 2013: 229)

465 (17) a. *The insect rose to the sky and disappeared.*

466 (Coca; 5.9)

467 b. *Then she left the room, not wanting to hear the rest of the conversation.*

468 (Coca; 12.5)

469

470 Similarly, path verbs are available in German and Polish; see (18).

471

472 (18) a. Und dann sind (...) fast alle Luftballons in die Luft gestiegen.

473 and then are almost all balloons in the.Acc air risen

474 'And then (...) almost all balloons rose into the air.'

475 (German; Tenten; 0.1)

476 b. *Er muss das Zimmer verlassen (...).*

477 he must the.acc room leave.

478 ‘He has to leave the room.’

479 (German; DeReKo; 0.2)

480 c. *Ferenz (...) spokojnym krokiem opuścił pokój.*

481 Ferenz calm.ins step.ins. left room.acc

482 ‘Ferenz left the room ambling.’

483 (Polish; NCP; 2.4)

484

485 It is also a well-known fact that almost all languages have deictic path verbs such as *come*

486 (Lewandowski 2010, 2014c; Ricca 1993; Miller & Johnson-Laird 1976); see (19).⁵

487

488 (19) a. (...) *your mother already came this morning.*

489 (Coca; 402.9)

490 b. *Der Vater ist schon gekommen.*

491 the father is already come

492 ‘The father already came.’

493 (German; DeReKo; 67.5)

494

⁵ One notable exception are Slavic languages in which the deictic path is typically encoded in the prefix, with the main verb conveying manner (e.g., Polish *przyjść* ‘come’, lit. ‘toward-walk’); see Lewandowski 2010, 2014c; Ricca 1993.

495 More importantly, recent work suggests that path verbs in S-languages are not necessarily
496 peripheral in usage, at least in oral communication. For example, in contrast to previous work that
497 exposed a preference for the manner conflation pattern among S-language speakers, an
498 experimental study by Lewandowski (2020b) found that German and Polish speakers, when orally
499 describing specific self-motion events, relied predominantly on path rather than manner verbs; cf.
500 Germ. *Er fällt ins Wasser* ‘He falls into the water’ vs. *Er gleitet ins Wasser* ‘He slides into the
501 water’; *Er kommt aus dem Wasser raus* ‘He comes out of the water’ vs. *Er kriecht die Kante hoch*
502 ‘He crawls up the ledge’; Pl. *Wpada do wody* ‘He falls into the water’ vs. *W-rzuca się do wody*
503 ‘He plunges into the water’, etc. The tendency to reduce the encoding of manner information is
504 likely to be the result of the experimental design. Unlike the majority of previous studies, in which
505 subjects were not faced with strict time limits (e.g., Berman & Slobin, 1994; Hendriks &
506 Hickmann, 2015; Özçalışkan, 2015; Pourcel, 2015; Stam, 2006), the study conducted by
507 Lewandowski (2020b) required the participants to provide a *simultaneous* commentary of an
508 ongoing video clip, which naturally resulted in time constraints on their responses. As such,
509 manner omission and, as a result, the reduction of the conceptual complexity of motion events
510 could have been a strategy of adapting to time constraints (cf. Maule et al., 2000). However, other
511 studies also suggest that there can be a general tendency, independent of time constraints, to omit
512 manner information if an alternative path-only strategy is available and manner is not
513 pragmatically relevant (see e.g., Filipović, 2007; Lewandowski & Özçalışkan 2018; McNeill &
514 Duncan 2000; Stefanowitsch 2013, for similar phenomena in other S-languages). Be that as it may,
515 the role of language-internal variation in language seems to be more robust than one might predict
516 based on Talmy’s (2000) typology.

In addition, V-framing is not limited to verbs that inherently express path, but it extends to the pattern illustrated in (8) and repeated here as (20); see also (21), for further examples.

(20) a. *El marinero saltó del barco y nadó a la orilla.*

the sailor jumped from.the boat and swam to the shore

‘The sailor jumped out of the boat and swam to the shore.’

(Spanish; Martínez-Vázquez 2015: 194)

b. *La gente è corsa fuori dallo stadio.*

the people is run outside from.the stadium

‘The people ran out of the stadium.’

(Italian; Masini 2005: 153)

(21) a. *Il court dans le jardin.*

he runs in the garden

‘He runs in/into the garden.’

(French; Pourcel & Kopecka 2006: 35)⁶

b. (...) *saltó a otro taxi (...).*

s/he.jumped to other taxi

‘(...)s/he jumped into another taxi (...).’

(Spanish; CREA; 0.5)

⁶ As is indicated in the English translation of (21a), the collocation *courir* ‘run’ + *dans* ‘in’ can refer to both locative and directional situations. Yet, as noted by an anonymous reviewer, the default interpretation is the locative one, while the directional reading is more context-dependent.

536 c. (...) *la pelota voló al cielo.*

537 the ball flew to.the sky

538 ‘(...) the ball flew to the sky.’

539 (Spanish; CREA; 0.2)

540 d. (...) *consiguió escalar al tejado de paja.*

541 s/he.achieved climb to.the roof of thatch

542 ‘(...) s/he managed it to climb up the thatched roof.’

543 (Spanish; CREA: 0.06)

544

545 Some researchers characterized expressions such as those in (20) and (21) as instances of S-
546 framing in V-languages (e.g., Beavers et al. 2009; Martínez-Vázquez 2015), because they include
547 manner of motion verbs followed by goal phrases. However, it should be stressed that in contrast
548 to the canonical S-framed constructions only directional manner verbs such as ‘run’, ‘jump’,
549 ‘climb’, ‘fly’, ‘swim’, etc. can appear with goal phrases in V-languages, while pure manner verbs
550 such as ‘dance’, ‘float’, ‘limp’, etc. yield ungrammatical results (Mateu 2012; Fábregas 2007;
551 Pedersen 2014); cf. (20) and (21) with (22).

552

553 (22) a. **El barco flotó a la costa.*

554 the boat floated to the coast

555 ‘The boat floated to the coast.’

556 (Fábregas 2007: 4)

557 b. **Juan cojeó a la puerta.*

558 John limped to the door

559 ‘John limped to the door.’

560 (Mateu 2012: 36)

561

562 We conducted an independent acceptability judgment task to verify the introspective
563 intuitions illustrated in (22). Participants were 20 Spanish native speakers ($M_{age}= 41.8$; range=21-
564 70, 16 females) from Spain (12 subjects) and Latin American countries such as Argentina, Mexico,
565 Chile, and Costa Rica (8 subjects). Each subject completed the survey individually, using an online
566 platform (i.e., Google Forms). The survey consisted of four sentences involving directional manner
567 of verbs as in (23) and four sentences involving pure manner verbs as in (24), along with eight
568 distractors. Participants were asked to judge the acceptability of each sentence on a 7-
569 point Likert scale from 1 (totally unacceptable) to 7 (totally acceptable). The average value for the
570 sentences as in (23) (i.e., directional manner) was 6.4, and for the sentences as in (24) (i.e., pure
571 manner), 1.8, thus corroborating the validity of the introspective data in (22).

572

573 (23) a. *Juan corrió al baño.*

574 John ran to.the bathroom

575 ‘John ran to the bathroom.’

576 b. *Juan nadó a la orilla.*

577 John swam to the shore

578 ‘John swam to the shore.’

579 c. *Juan saltó a la piscina.*

580 John jumped to the pool

581 ‘John jumped into the pool.’

- 582 d. *Juan caminó a la cocina.*
 583 John walked to the kitchen
 584 ‘John walked to the kitchen.’
 585 (24) a. *Juan bailó a la habitación.*
 586 John danced to the room
 587 ‘John danced to the room.’
 588 b. *Juan cojeó a la estación.*
 589 John limped to the station
 590 ‘John limped to the station.’
 591 c. *Juan pataleó a la escuela.*
 592 John stamped to the school
 593 ‘John stamped to the school.’
 594 d. *Juan correteó al baño.*
 595 John scampered to the bathroom
 596 ‘John scampered to the bathroom.’
 597

598 Another crucial difference with respect to the S-framed pattern is that the goal phrase
 599 typically lacks an unambiguously directional preposition. This is not surprising given that V-
 600 languages generally do not have path elements (Beavers et al. 2009; Cummins 1996; Matsumoto
 601 2018), one obvious exception being non-boundary-crossing prepositions such as Spanish *hasta* ‘up
 602 to’ and *hacia* ‘toward’. For example, the French preposition *dans* ‘in’, which receives a directional
 603 interpretation in (21a), generally assumes locative functions (Kopecka 2004); see (25a). Similarly,

604 *fuori di* ‘outside of’ in Italian, which introduces a spatial goal in (20b), has a primarily locative
605 meaning (Proudfoot & Cardo 1997); see (25b).

606

607 (25) a. *Fernando Sucre est dans la maison de sa tante (...).*

608 Fernando Sucre is inside the house of his aunt

609 ‘Fernando Sucre is in his aunt’s house (...).’

610 (French; Tenten; 50.63)

611 b. *La chiesa era affollatissima, c'erano dei fedeli che*

612 the church was packed.out there.were some worshippers who

613 *ascoltavano la messa fuori della chiesa.*

614 listened the mass outside of.the church

615 ‘The church was packed out, there were some worshippers who were listening to
616 the mass outside the church.’

617 (Italian; Proudfoot & Cardo 1997: 324)

618

619 Regarding the Spanish preposition *a*, which appears in (20a) and (21b-d), Fábregas (2007) argues
620 that it has an inherently locative value because it is compatible with stative verbs; see (26).

621

622 (26) a. *Juan está al sol.*

623 Juan is at.the sun.

624 ‘John is standing on the sun’

625 b. *Juan permaneció al borde del acantilado.*

626 Juan stayed at.the border of.the cliff.

627 ‘John stayed at the border of the cliff.’

628 (Fábregas 2007: 10)

629
630 Yet, other researchers stress that the locative uses associated with Spanish *a* are rather limited,
631 suggesting that this preposition should be classified as primarily directional (Butt & Benjamin
632 1988; De Bruyne 1999). In any event, even if we want to assume that *a* predominantly denotes
633 dynamic relations, there seems to be agreement in the literature that its directional import is rather
634 vague, especially when compared to the meaning of proper path satellites in S-languages (see e.g.,
635 Lewandowski 2014a; Ch. 3, for further discussion). At the same time, the limited scope of locative
636 uses of *a* is expected, because it is in complementary distribution with the preposition *en* ‘in’:
637 while the latter indicates the location of the figure inside the ground (e.g., *en el cajón* ‘in the
638 drawer’) or on a surface (vertical or horizontal; e.g., *en la mesa* ‘on the table’, *en la pared* ‘on the
639 wall’), the use of the former is constrained to situations in which the figure is contact with the
640 exterior boundary of the ground (Fernández López 1999: 34-35); see (26).

641 All in all, we are inclined to consider the pattern illustrated in (20) and (21) as a special
642 case of V- rather than S-framing, because it lacks an unambiguous path element outside the verb
643 and, therefore, the path component, while not intrinsically encoded, is associated with the lexical
644 specifications of the *directional* manner verb.

645 Two additional remarks need to be made at this point. First, the non-canonical V-framed
646 pattern discussed here is not limited to V-languages. For example, as is shown in (27), directional
647 manner of motion verbs such as ‘run’, ‘jump’, ‘fly’, etc. can appear with locative goal phrases
648 in S-languages such as English, too.

- 650 (27) a. *My mum ran in the room and turned on the light and there was nothing there!!!*
 651 (Tutton 2009: 9)
 652 b. *He jumped in the river and swam.*
 653 (*ibidem*, 14)
 654 c. *Just as Sue went to close the window a fly flew in the room.*
 655 (*ibidem*, 17)
 656

657 Second, given that the path is not inherently encoded but instead encyclopedically associated
 658 with the verb, the directional value of the construction is weaker compared to the canonical V-
 659 framed pattern. This, in turn, leads to restrictions on its use and, more specifically, contexts that
 660 reinforce a goal-oriented interpretation of the motion event are preferred. For example, perfective
 661 forms as in (28) are more felicitous than imperfective forms such as in (29).⁷
 662

- 663 (28) a. *Juan corrió al baño.*
 664 John ran to.the bathroom
 665 ‘John ran to the bathroom.’
 666 b. *Juan nadó a la orilla.*
 667 John swam to the shore
 668 ‘John swam to the shore.’

⁷ The sentences in (28) correspond to (23) and, as mentioned there, they received an average rating of 6.4 on a 7-point Likert scale. In contrast, the sentences in (29) were rated with an average score of 4.8 by the same group of participants, thus showing a much lower degree of acceptability.

669 c. *Juan saltó a la piscina.*

670 John jumped to the pool

671 ‘John jumped into the pool.’

672 d. *Juan caminó a la cocina.*

673 John walked to the kitchen

674 ‘John walked to the kitchen.’

675

676 (29) a. ?*Juan estaba corriendo al baño cuando lo vio María.*

677 John was running to the bathroom when him saw Mary

678 ‘John was running to the bathroom when Mary saw him.’

679 b. ?*Juan estaba nadando a la orilla cuando lo vio María.*

680 John was swimming to the shore when him saw Mary

681 ‘John was swimming to the shore when Mary saw him.’

682 c. ?*Juan estaba saltando a la piscina cuando lo vio María.*

683 John was jumping to the pool when him saw Mary

684 ‘John was jumping into the pool when Mary saw him.’

685 d. ?*Juan estaba caminando a la cocina cuando lo vio María.*

686 John was walking to the kitchen when him saw Mary

687 ‘John was walking to the kitchen when Mary saw him.’

688

689 These differences in acceptability are likely to stem from the fact that perfective tense

690 forms are more likely to receive a goal-oriented interpretation, because the temporal framework

691 already profiles the final state of the action denoted by the verb. In contrast, imperfective tense

forms are less likely to receive a goal-oriented interpretation, because the temporal framework profiles an ongoing process, thus deemphasizing the endpoint of motion (Langacker, 2008); see also Nikitina (2008) and Tutton (2009) for a detailed analysis of the factors that favor the use of locative goal markers in English.

To sum up, in V-framed constructions, the framing event, i.e., the path, is associated with the main verb. The most prototypical instances of V-framing are those in which the verb inherently lexicalizes path. However, there also exists a non-canonical extension of the V-framed pattern in which the notion of directionality is not intrinsically encoded in the verb stem, but rather inferred from the lexical conceptual specifications of the verb. Both types of V-framing, the prototypical and the extended one, are attested in both V- and S-languages.

3.2. Satellite-framed constructions: Prefix- and nonprefix-framing

We now turn our attention to S-framing, that is, constructions in which the path component is associated with a directional element around the verb, thus leaving the verb root free to encode manner.

Languages grouped as S-framed in Talmy's (1991, 2000) typology have rich inventories of non-verbal directional elements (Beavers et al., 2009), while their path verb lexicon tends to be less sizable compared to V-languages. Path satellites can be either morphologically independent, such as Germanic particles and prepositions or morphologically bound, such as Slavic prefixes; cf. (30) with (31).

(30) a. *She popped into the room and turned off the outside light (...).*

(Coca; 0.7)

b. *An owl popped out.*

715 (Slobin 2004: 224)

716 (31) (...) *wyleciała chmara rozwścieczonych owadów* (...).

717 out.flew swarm.nom enraged.gen insects.gen

718 ‘(...) a swarm of enraged insects flew out (...).’

719 (Polish; NCP; 2.5)

720

721 As has been mentioned in Section 2, recent work exposed intratypological variability within the
722 S-framed group, with Germanic languages conveying more specific manner dimensions than
723 Slavic languages; see e.g., Filipović (2007) for a comparison of English with Serbo-Croatian and
724 Lewandowski & Mateu (2016) for a comparison of German with Polish. One explanation that was
725 given for this difference is that Germanic languages have a richer manner of motion verb lexicon
726 than Slavic languages (e.g., Kopecka, 2010; Koptjevskaja-Tamm et al., 2010). While this may well
727 be true, we will show that there is another important reason, largely unnoticed in previous research,
728 for why speakers of Germanic languages provide more detailed manner descriptions than speakers
729 of Slavic languages. More specifically, we will argue that prefix-framed motion constructions,
730 which are predominant in Slavic, impose tighter restrictions on manner of motion verbs than
731 nonprefix-framed motion constructions, i.e., constructions associated with particles and
732 prepositional phrases, which are predominant in Germanic.

733 Both prefix- and nonprefix-framed constructions freely combine with path verbs and
734 directional manner verbs; see (32) for nonprefix-framed constructions with path verbs, (33) for
735 prefixed-framed constructions with path verbs, (34) for nonprefix-framed constructions with
736 directional manner verbs, and (35) for prefix-framed constructions with directional manner verbs.

737

- 738 (32) a. (...) *the plane rose into the air* (...).
739 (Tenten; 0.08)
740 b. *Chaplin kommt aus dem Wasser.*
741 Chaplin comes out.of the.dat water
742 ‘Chaplin comes out of the water.’
743 (German; Lewandowski & Özçalışkan 2018: 26)
- 744 (33) *Wpadł do wody*
745 he.into.fell to water.acc
746 ‘He fell into the water’
747 (Polish; Lewandowski 2020b)
- 748 (34) a. *Children and women (...) ran into the water.*
749 (Coca; 6.7)
750 b. *Der Mann springt herein* (...).
751 the man jumps into
752 ‘The man jumps into (...).’
753 (German; DeReKo; 0.5)
- 754 (35) a. (...) *wbiegł do pokoju syna.*
755 he.into.ran to room.gen son.gen
756 ‘(...) he ran into his son’s room.’
757 (Polish; NCP; 2.6)
- 758 b. *Spomiędzy drzew wyskoczyła trójka mężczyzn.*
759 from.in.between trees.gen out.jumped troika.nom men.gen
760 ‘Three men jumped out from in between the trees.’

761 (Polish; NCP; 6.1)

762

763 However, there is a striking difference between the prefix- and nonprefix-framed pattern with
764 regard to the acceptability of other verb types. On the one hand, the nonprefix-framed pattern is
765 much more flexible than the prefixed-framed pattern in its ability to combine with pure manner
766 verbs; cf. (36) and (37); see also (4) cited in Section 1.

767

768 (36) a. *He stumbled into my room, squinting at the beside light.*

769 (Coca; 0.9)

770 b. *We staggered out of the bouncing room and slammed the door behind us.*

771 (Coca; 0.06)

772 c. *Er ist ins Zimmer getanzt.*

773 he is in.the.acc room danced

774 ‘He danced into the room.’

775 (German; Grewendorf 1989: 12)

776 d. *Ein Mann hinkte heraus und blieb vor der Tür stehen.*

777 a man limped out and remained in.front.of the.dat door stay

778 ‘A man limped out and stopped in front of the door.’

779 (German; Tenten; 0.01)

780 (37) a. **Wpotknął się do mojego pokoju.*

781 he.into.stumbled to my.gen room.gen

782 ‘He stumbled into my room.’

783 (Polish)

784 b. **Wychwialiśmy się z pokoju.*

785 we.out.staggered from room.gen

786 ‘We staggered out of the room.’

787 (Polish)

788 c. **Wtańczył do pokoju.*

789 he.into.danced to room.gen

790 ‘He danced into the room.’

791 (Polish)

792 d. ??*Mężczyzna wykulał.*⁸

793 man.nom out.limped

794 ‘A man limped out.’

795 (Polish)

796

797 On the other hand, the nonprefix-framed construction is capable of combining with manner verbs
798 which do not lexically encode motion, the most widely quoted ones being verbs of sound emission
799 (Haselbach 2018; Goldberg 1995; Levin 1993); see (38). When used with a path element, these
800 verbs specify the sound that is concomitant of the figure’s motion (Levin 1993: 236).

801

802 (38) a. *The landlord roared into the garage (...).*

⁸ All of the 12 consulted Polish native speakers rated the sentences in (37a,b,c) as unacceptable. With regard to (37d), nine of the native speakers rated it as unacceptable, while three other stated that they found it neither fully acceptable nor fully unacceptable.

803 (Coca; 0.1)

804 b. *The bullet whistled through the window.*

805 (Levin 1993: 15)

806 c. (...) *der Rest des Zuges rumpelt aus den Gleisen (...).*

807 the rest the.gen train rumbles out.of the.dat track

808 ‘(...) the rest of the train rumbles out of the track (...).’

809 (German; Tenten; 0.01)

810 d. *Das Fahrrad ist in die Altstadt gequietscht.*

811 the bike is in the.acc old.town squeaked

812 ‘The bike squeaked into the old town.’

813 (German; Haselbach 2018: 22)

814

815 None of these verbs is compatible with the prefix-framed pattern, as is shown in (39).

816

817 (39) a. **Gospodarz wryknął do gararzu.*

818 landlord.nom into.roared to garage.gen

819 ‘The landlord roared into the garage.’

820 (Polish)

821 b. **Pocisk przegwizdnął przez okno.*

822 bullet.nom through.whistled through window.acc

823 ‘The bullet whistled through the window.’

824 c. **Samochód wydudnia.*⁹

⁹ All of the 12 consulted Polish native speakers rated the sentences in (39a,b,c) as unacceptable.

825 car.nom out.rumbles

826 ‘The car rumbles out.’

827 (Polish)

828 d. **Velosiped v’skripel v staryj gorod.*

829 bike.nom into.squeaked in old.acc town.acc

830 ‘The bike squeaked into the old town.’

831 (Russian; Svetlana Sokolova, pc.)

832

833 These data thus show that the prefix-framed construction places tighter selectional restrictions on
834 the verbal items with which it occurs than the nonprefix-framed construction: while the former
835 is compatible with path and directional manner verbs, the latter extends its combinability to pure
836 manner verbs and nonmotional manner verbs as well. Given that the lexical specifications of pure
837 and nonmotional manner verbs lack the component of directionality, this pattern of differences
838 clearly indicates that the nonprefix-framed construction shows a higher ability to impose a
839 directed motion meaning on verbs that do not match the constructional meaning compared to the
840 prefix-framed construction.

841 It is important to stress that the same constraints appear to hold when prefix- and nonprefix-
842 framing coexist within a particular language. For example, even though German predominantly
843 encodes path in particles and prepositions, it also has directional prefixes. Consistent with the
844 observations outlined above, German prefixes typically appear with directional manner of motion
845 verbs such as ‘climb’, ‘fly’, ‘jump’, ‘drive’, etc. but rarely, if ever, with pure manner verbs such
846 as ‘dance’ and ‘float’ or nonmotional manner verbs such as ‘whistle’ and ‘roar’ (Andreas Trotzke,

p.c.); see (40). This pattern thus corroborates our idea that variation in the expression of motion is associated with particular constructions rather than with particular languages.

(40) a. *Dominick erklettert einen Panzer und wirft eine Handgranate (...).*

Dominick up.climbes a.acc tank and throws a.acc hand.grenade

‘Dominick climbs up a tank and throws a hand grenade (...)’

(German; DeReKo, 0.03)

b. *Die Sonde umflog den Mond (...).*

the.nom probe around.flew the.acc moon

‘The probe flew around the moon.’

(German; DeReKo; 0.01)

c. *Der Läufer hat die Hürden mühelos übersprungen.*

the.nom runner has the.acc hurdles effortlessly over.jumped

‘The runner jumped over the hurdles effortlessly.’

(Hall & Scheiner 2018: 48)

d. *Er durchfuhr den Ort im Schrittempo.*

he through.drove the.acc town at.a.walking.pace

‘He drove through the town at a walking pace.’

(*ibid.*, 47)

Similarly, Kopecka (2006) observes that French, a V-language, has some prefixed motion verbs. Again, consistent with our proposal, her data indicate that path prefixes in French typically combine with directional manner verbs (e.g., *ac-courir* ‘run to’, *par-courir* ‘run through’, *en-voler*

870 ‘fly away’, *sur-voler* ‘fly over’, *dé-rouler* ‘roll out’), while no examples with pure manner of
871 motion verbs are provided; see (41) for an illustration.

872

873 (41) a. *Les abeilles se sont envolées de la ruche.*

874 the bees refl. are away.flown from the hive

875 ‘The bees flew away from the hive.’

876 (Kopecka 2006: 85)

877 b. *Les enfants ont parcouru le parc.*

878 the children have through.run the park

879 ‘The children ran all over the park.’

880 (*ibidem*, 88)

881

882 Likewise, Spanish, another well-established V-language, has at least two prefixed manner of
883 motion verbs, namely *sobre-volar* ‘fly over’ and *re-correr* ‘go/walk all over, traverse’ (lit. ‘re-
884 run’); see (42).

885

886 (42) a. *El avión sobrevoló la autopista (...).*

887 the plane over.flew the highway

888 ‘The plane flew over the highway.’

889 (CREA; 0.9)

890 b. *Bajó y recorrió toda la casa (...)*

891 s/he.came.down and re.ran all the house

892 ‘S/he came down and walked all over the house (...).

Here again, in our view, it is not a coincidence that the prefixes *sobre-* and *re-* combine with the directional manner verbs *volar* ‘fly’ and *correr* ‘run’, respectively, but not with pure manner verbs such as *bailar* ‘dance’, *flotar* ‘float’, etc.

To sum up, in S-framed constructions, the framing event, i.e., the path, is associated with a directional element around the verb stem. There exist at least two types of S-framing, i.e., prefix-framing and nonprefix-framing. Prefix-framed constructions typically combine with either path verbs or directed manner verbs and, as such, they have a limited capacity to impose a directed motion interpretation on verbal items. By contrast, nonprefix-framed constructions combine with a broader range of verbs including path verbs, directional manner verbs, pure manner verbs, and manner verbs that do not lexicalize motion. Therefore, unlike prefix-framed constructions, they show a high capacity to impose a directed motion interpretation on verbs that do not match the constructional meaning. Some languages such as Polish (and Slavic, in general) show a strong preference for prefix-framing, while others such as German, and, although much more marginally, French and Spanish, use prefix-framing in addition to another predominant pattern (nonprefix-framing in the case of German and V-framing in the case of French and Spanish).

4. Self-motion events as verb-construction mappings: Typological implications

The range of options for encoding motion events available to languages points to a more nuanced typology than a strict dichotomy of V- vs. S-languages. The available evidence suggests that the attested patterns can be accounted for in terms of constraints on verb-construction mappings.

Starting with verb semantics, we have suggested that the verbs participating in the expression of motion do not fall into a binary classification system consisting of path verbs vs.

manner verbs but instead can be arranged along a cline with different degrees of path salience: path verbs (e.g., ‘enter’) > directional manner verbs (e.g., ‘run’) > pure manner verbs (e.g., ‘dance’) > nonmotion manner verb (e.g., ‘whistle’). Turning now to constructions, we have distinguished three basic types of motion patterns depending on where the framing event is encoded: V-framing, prefix-framing, and nonprefix-framing.

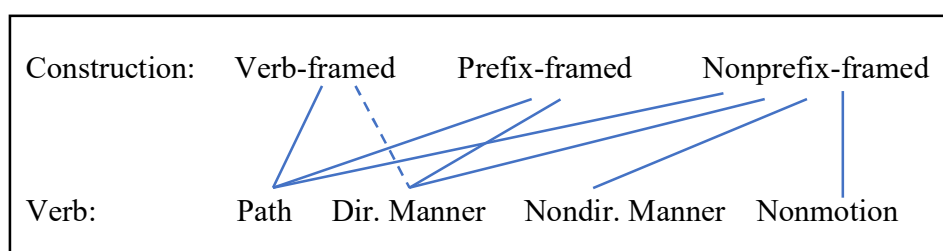


Figure 4. Constraints on verb-construction mappings

As Figure 4 illustrates, the V-framed pattern imposes the heaviest restrictions on verbs, followed by the prefix-framed pattern, followed by the nonprefix-framed pattern. More specifically, the V-framed pattern accepts path verbs and directional manner verbs. However, as is indicated by the discontinuous lines, its compatibility with directional manner verbs is restricted (e.g., perfective verb forms are preferred over imperfective ones). In turn, the prefix-framed pattern freely accepts both path and directional manner verbs, but generally does not combine with pure manner verbs and manner verbs that do not lexicalize motion. Finally, the nonprefix-framed pattern is compatible with the entire range of semantic classes, i.e., path verbs, directional manner verbs, pure manner verbs, and manner verbs that do not lexicalize motion.¹⁰

¹⁰ It should be noted, however, that the compatibility of nonmotional manner verbs with motion constructions is not unconstrained. For example, as far as sound emission verbs are concerned, one

important requirement that has been observed in earlier work is that the motion event and the sound emission event must be causally related (Levin & Rappaport Hovav, 1991, 1995). As such, the sentences in (38), repeated here as (i) are acceptable, because the sound is a necessary concomitant of the motion activity (i.e., the sound is produced as a *result* of the subject's motion).

- (i) a. *The landlord roared into the garage (...).*

(Coca; 0.1)

- b. *The bullet whistled through the window.*

(Levin 1993: 15)

- c. (...) *der Rest des Zuges rumpelt aus den Gleisen (...).*

the rest the.gen train rumbles out.of the.dat track

‘(...) the rest of the train rumbles out of the track (...)’

(German; Tenten; 0.01)

- d. *Das Fahrrad ist in die Altstadt gequitscht.*

the bike is in the.acc old.town squeaked

‘The bike squeaked into the old town.’

(German; Haselbach 2018: 22)

On the other hand, the sentences in (ii) are unacceptable, because the sound is emitted *intentionally* and, therefore, there is no causal link between motion and the sound emission event; see also Broccias (2003: 68ff.); Jackendoff (1990:88ff.), and Rohde (2001:244ff.) for further discussion.

One important insight that emerges from our data analysis is that the compatibility constraints outlined above reflect the iconicity principle, according to which units that are conceptually or semantically close are placed together in language structure.¹¹ Conversely, units that are conceptually or semantically distant are placed at a distance from each other in language structure (Bybee 1985; Croft 1990; Givón 1991). For example, English offers two options for encoding transfer: one in which the recipient is expressed as an indirect object (e.g., *Joseph sent his father a letter*) and another in which the recipient is expressed as a prepositional phrase (e.g., *Joseph sent a letter to his father*). These alternative coding strategies involve subtle differences in meaning: the indirect object construal, in which the recipient is placed closer to the verb, implies that the recipient received the letter. By contrast, the prepositional phrase construal, in which the recipient is separated from the verb by a preposition, leaves it open whether the recipient received or not the letter (Radden 2008).

Another widely cited example of iconicity concerns possession relations. It is quite intuitive that inalienable possession (e.g., body parts) is a conceptually tighter relation than alienable

-
- (ii) a. *Kelly laughed out of the room.

(Levin & Rappaport Hovav 1995:197)

- b. *Dorothy sang out of the room.

(*ibidem*)

- c. *He yelled down the street.

(*ibidem*, 190)

¹¹ It is very important to highlight, however, that iconicity should be regarded as a tendency rather than a rule; see e.g., Croft (1990: 81).

possession, because the former refers to permanent relations while the latter refers to possessions that can be temporary (e.g., personal belongings). Consistent with the proximity principle, Haiman (1985) shows that in a large number of languages, the encoding of inalienable possession ranks lower in linguistic distance than the encoding of alienable possession (see also Croft 2003). Turning back our attention to motion events, the selectional restrictions associated with particles/prepositions *vs.* prefixes seem readily explainable as iconic, too. Given that path prefixes are morphologically bound they attract verbs that are closely related semantically, and more specifically, verbs that share the semantic property of directionality (i.e., path and directional manner verbs). On the other hand, given that particles and prepositions are placed at a greater distance with respect to the verb stem, they also combine with verbs that show lower semantic relatedness (i.e., verbs that do not evoke directionality such as pure manner verbs and nonmotional manner verbs). Therefore, in line with the iconicity principle, a tight semantic link between the verb stem and the path element is represented by a correspondingly tight morphological link. One fundamental consequence of this iconic pattern is that nonprefix-framed constructions display a greater ability to impose a directed motion interpretation on verbal items than prefix-framed constructions.

At the same time, the patterns of semantic relations between verbs and satellites could also be the result of lexicalization. It is a well-known fact that prefixes evolved from autonomous words such as particles, resulting not only in morphological bounding, but also semantic opacity (Los et al. 2012; Śmiech 1986; cf. Brinton and Traugott 2005). Thanks to semantic opacity, prefixed verb compounds are likely to be processed as a single holistic meaning unit, which naturally entails a close conceptual alignment between the prefix and the verb (Dewell 2011). This stands in contrast to particle verbs and combinations of verbs with prepositional phrases, which show a lower degree

980 of lexicalization and hence display greater semantic independence from the verb.¹² That being said,
981 given the scarcity of research on this topic, semantic relations between verbs and satellites require
982 more explicit examination in future research. As suggested by an anonymous reviewer, a
983 particularly relevant testing ground for this purpose could be polysynthetic languages, which
984 provide different slots (at smaller or greater distance from the verb root) for the encoding of
985 directional elements.

986 It is also important to highlight that, in line with Goldberg (1995), our analysis avoids the
987 problem of positing implausible verb senses not just within but also across languages, because

¹² It should be kept in mind, however, that lexicalization is a matter of degree and hence there is no strict dichotomy between lexicalized vs. non-lexicalized verb-satellite compounds. Roughly speaking and simplifying the matter, on one extreme of the continuum are prefixed verbs, which are most prone to be recognized as a single semantic unit. On the other extreme are combinations of verbs with prepositional phrases, which are least likely to be processed holistically. Particle verbs fall somewhere in between these two poles of the spectrum as their grammatical status can be regarded as more bound to the verb root than that of prepositional phrases but more independent from the verb root than that of prefixes (see e.g., Dewell 2011; Los et al. 2012). One important indicator of lexicalization is the (in)ability of verb-satellite combinations to amalgamate more than one path segment around a single verb. Given that morphologically bound compounds (i.e., prefixed verbs) are more lexicalized than morphologically free compounds (i.e., particle verbs and verbs associated with prepositional phrases), only the latter allow for the accumulation of multiple paths (e.g., *run back up the stairs*; see e.g., Berman & Slobin 1994; Dewell 2012; Filipović 2007; Lewandowski 2020a; Lewandowski & Mateu 2016, for further details).

cross-linguistic mismatches in argument structure realization do not stem from differences in lexical semantic specifications of the verb but instead are the result of the constraints imposed by the constructions available in particular languages. That is, verbs such as ‘run’, ‘dance’, and ‘rumble’ are assumed to have the same or at least a very similar meaning in English, German, Polish, and Spanish, while their ability to appear in the intransitive motion construction varies across these languages due to the construction-specific restrictions.

If the diversity of motion encoding patterns can be reinterpreted in terms of verb-construction combinability constraints, then what is regarded as intertypological, intratypological, and language-internal variability is an epiphenomenon of the availability of particular motion constructions in the world’s languages. For example, Spanish is classified as a V-language, because it shows great diversity in path verbs but has few non-verbal directional elements, thus requiring their speakers to express motion predominantly in V-framed constructions. On the other hand, both German and Polish are classified as S-languages because they show great diversity in directional satellites but relatively low diversity in path verbs, thus requiring their speakers to express motion predominantly in S-framed constructions. At the same time, however, these languages differ in their inventory of satellites. Specifically, when talking about boundary-crossing events, Polish speakers use prefixes to mark the path. In turn, German speakers tend to encode path in particles and prepositional phrases due to a relatively low productivity of prefixes in German motion constructions (cf. Dewell 2011). This pattern of differences thus results in intratypological variability, with Polish speakers predominantly employing the prefix-framed and German speakers, the nonprefix-framed lexicalization strategy.

Yet, even though languages typically show preference for one type of framing over another, they rarely, if ever, entirely belong to a single lexicalization pattern. For example, German speakers

use V- and prefix- framing in addition to nonprefix-framing, Polish speakers use V-framing in addition to prefix-framing, French and Spanish speakers use prefix-framing in addition to V-framing, etc. As such, strictly speaking, motion even variation is associated with particular constructions rather than with particular languages. For that reason, it is empirically more appropriate to approach Talmy's (1991, 2000) classification of languages as a typology of constructions whose distribution is determined by the availability of morpho-lexical means for encoding motion in particular languages (see Beavers et al. 2009, for a similar line of reasoning).

One final observation concerns the role of constructions *vs.* verbs in the world's languages. Romance languages predominantly rely on V-framed constructions, which accept verbs that match the meaning of directed motion, i.e., path verbs or (to a lower degree) directional manner verbs. Germanic languages, in turn, predominantly rely on nonprefix-framed constructions, which show a very high ability to impose a directed motion interpretation on verbs that do not lexicalize directionality. Somewhere in between are Slavic languages, which generally make use of prefix-framed constructions. These constructions combine with path and directional manner verbs and therefore, show a greater capacity of influencing a directed motion interpretation than the V-framed pattern, but lower than the nonprefix-framed pattern. This might suggest that constructional generalizations in the domain of motion event encoding are more available in S-languages and especially Germanic compared to V-languages, because in V-languages, verbs typically appear in constructions that instantiate their meanings. However, even though verbs have a higher cue validity in V-languages compared to S-languages, it is still possible to claim that V-language speakers are able to form abstract argument structure constructions. In fact, many of the constructionist approaches advocate that frequency effects can override the requirement of mismatch between verbal and constructional meaning whereby the frequent use of a construction

can lead to it being cognitively stored (e.g., Bybee 2013; Croft 2001; Goldberg 2006). Given that this is an empirical question, future experimental work, for instance, a task consisting in the interpretation of novel verbs in familiar argument structure constructions, could show if constructional generalizations are available in V-languages (see also Goldberg 2006: 120).

5. Extending our analysis to caused-motion events

A more in-depth engagement with the effect of event structure differences on verb-construction compatibility is beyond the scope of this paper. However, before concluding, we would like to point out some important discrepancies between self- and caused-motion events in their ability to combine with verbs. Earlier studies in the spirit of Talmy (2000) generally assume that Talmy's lexicalization patterns apply equally well to all kinds of motion events. As such, typological contrasts between self- and caused-motion have been largely neglected (but see e.g., Lewandowski & Özçalışkan 2018, for an exception). However, the internal make-up of self- and caused-motion constructions is not identical, which, importantly, results in significant differences in their ability to combine with verbs. Specifically, the caused-motion construction includes an additional participant, namely, an external cause that propels the figure/theme's movement by exerting force upon it. As will become clear in this section, the notion of external causation, which is inherent to the caused-motion but not to the intransitive motion construction, has an important impact on verb-construction combinability constraints.

Let us start with a brief overview of the verb-construction mappings that emerge from our data. All types of framing are compatible with verbs that intrinsically encode caused motion, such as causative path verbs (e.g., 'insert', 'remove', etc.) and causative directed manner verbs (e.g., 'throw', 'push', 'pour', etc.); see (43) for V-framing, (44) for prefix-framing, and (45) for nonprefix-framing.

1057

1058 (43) a. (...) *metió el chaleco en un cajón* (...).

1059 s/he.inserted the vest in a drawer

1060 ‘(...) s/he put the vest into the drawer (...).’

1061 (Spanish; CREA; 25.5)

1062 b. *Tira la piedra a un estanque.*

1063 s/he.throws the stone to a pond

1064 ‘S/he throws the stone into a pond.’

1065 (Spanish; Lewandowski & Özçalışkan 2018: 26)

1066 c. *He removed the knife from his mouth and brandished it.*

1067 (Coca; 41.7)

1068 d. *Wyjął z kieszeni komórkę* (...).

1069 he.removed from pocket.gen cell.phone.acc

1070 ‘He took a cell phone out of his pocket.’

1071 (Polish; NCP; 5.1)

1072 (44) a. (...) *empujó el balón a la red* (...).

1073 s/he.in.pushed the ball to the net

1074 ‘(...) s/he pushed the ball into the net (...).’

1075 (Spanish; CREA; 0.6)

1076 b. (...) *otworzył samochód i wepchnął jego właściciela do środka.*

1077 he.opened car.acc and he.into.pushed its.acc owner.acc to inside

1078 ‘(...) he opened the car and pushed his owner inside.’

1079 (Polish; NCP; 1.2)

1080 c. *Rutger podniósł szklankę i (...) wlał jej zawartość*
1081 Rutger lifted glass.acc and into.poured its.acc content.acc
1082 *do ust.*
1083 to mouth.gen

1084 ‘Rutger lifted the flass and poured its content into his mouth.’

1085 (Polish; NCP; 1.4)

1086 (45) a. *Sam shoved it into the carton.*

1087 (Goldberg 1995: 161)

1088 b. *Er zieht das Boot aufs Wasser hinaus.*

1089 he pulls the boat onto.the.acc water out

1090 ‘He pulls the boat out onto the water.’

1091 (German; DeReKo; 0.3)

1092

1093 However, the S-framed pattern (both prefix- and nonprefix-framed) extends its compatibility to
1094 other verb classes that do not inherently lexicalize the causation of motion. For example, verbs of
1095 cutting such as ‘saw’, ‘slice’, etc. do not intrinsically specify the movement of the theme/figure,
1096 but the theme/figure’s movement can occur as a result of the action denoted by the verb: e.g., when
1097 we saw a tree, part of the tree is likely to fall away (see also Goldberg 1995: 171). In a similar
1098 vein, verbs of cleaning do not inherently encode caused-motion, but they do involve the removal
1099 of a substance (the theme/figure) from a location (the ground). Thanks to these encyclopedic

1100 associations evoked by the verb meaning verbs of cutting and cleaning can appear in the S-framed
1101 caused-motion schema; see (46).¹³

1102

1103 (46) a. *Sam hacked a piece off the block.*

1104 (Goldberg 1995: 154)

1105 b. *Mężczyźni odpilowali fragment szupa.*

1106 men.nom they.off.sawed part.acc pole.gen

1107 ‘The men sawed off part of the pole.’

¹³ Importantly, however, cleaning verbs such as ‘wash’ are also compatible with the caused-motion schema in some V-languages such as Italian; see (i).

(i) *Gianni ha lavato via la macchia.*

Gianni has washed away the stain

‘Gianni washed the stain away.’

(Mateu 2012: 265)

One explanation that was given for this constructional pattern is that by encoding removal, the verb ‘wash’ already involves directionality. This directionality is then further specified by the particle *via* ‘away’ (see Mateu 2012; Mateu & Rigau 2010, for further details). Importantly, the existence of the motion construction exemplified in (i) provides support for the observation that Italian is a fairly atypical example of V-language, with some authors claiming that it behaves at least partly as an S-language (see e.g., Berthele 2006; Cini 2008; Iacobini 2015, among others, for further details).

1108 (Polish; Tenten; 0.5)
 1109 c. *Polly hatte sich (...) das Shampoo aus dem Haar gespült (...).*
 1110 Polly had refl. the.acc shampoo out.of the.dat hair rinsed
 1111 ‘Polly had rinsed the shampoo out of her hair.’

1112 (German; DeReKo; 0.03)
 1113 d. *Delikatnie i ostrożnie zmyła krew (...).*
 1114 gently and carefully she.away.washed blood.acc
 1115 ‘She washed the blood away gently and carefully (...).’

1116 (Polish; NCP; 1.5)

1117
 1118 At the same time, there are differences within the S-framed pattern, with the nonprefix-
 1119 framed construction allowing for a greater mismatch between verbal and constructional meaning
 1120 than the prefix-framed construction. For example, unlike the prefix-framed construction, the
 1121 nonprefix-framed one accepts verbs that do not evoke any direct association with caused-motion,
 1122 including verbs that do not independently license a direct object; e.g., ‘rattle’, ‘buzz’, ‘think’,
 1123 ‘laugh’, ‘sneeze’, etc; see (47).

1124
 1125 (47) a. *I rattled out a box of candles (...).*

1126 (Broccias 2003: 51)

1127 b. *According to police, as he and his friends were buzzed into the lobby, two men*
 1128 *(...) yelled, “Give it up”.*

1129 (Rohde, 2001: 110)

1130 c. *In the last Star Trek episode, there was a woman who could think people into a*

1131 *different galaxy.*
 1132 (Goldberg 1995: 154)
 1133 d. (...) für diesen Begriff wäre jeder vor 2 Jahren aus
 1134 for this term was.conj everyone before 2 years.dat out.of
 1135 dem Zimmer gelacht worden.
 1136 the.dat room laughed been
 1137 ‘For using this term, everyone would have been laughed out of the room 2
 1138 years ago.’
 1139 (German; Tenten; 0.001)
 1140 e. *Hans nieste das Taschentuch von dem Tisch.*
 1141 Hans sneezed the.acc hankie from the.dat table
 1142 ‘Hans sneezed the hankie off the table.’
 1143 (German; Perek & Hilpert 2016: 138)
 1144 This brief overview, which is, of course, subject to further refinement, illustrates two important
 1145 points. The first one concerns differences in verb acceptability between the intransitive and the
 1146 caused-motion construction. Specifically, the caused-motion construction is generally more
 1147 flexible when it comes to the use of verbs that do not specify motion in their lexical semantics. In
 1148 the case of self-motion, non-motion verbs are practically limited to the nonprefix-framed
 1149 construction, the most representative verb class being verbs of sound emission. By contrast, in the
 1150 expression of caused-motion, non-motion verbs (e.g., verbs of cutting and cleaning) show a
 1151 broader constructional distribution, because they are not only compatible with the nonprefix-

framed pattern but also with the prefix-framed one. In addition, the non-motion verbs types that occur in the caused-motion construction are more diverse compared to the non-motion verbs types that appear in the intransitive motion construction: they include, among others, verbs of cutting (e.g., ‘saw’, ‘hack’, ‘slice’, etc.), verbs of cleaning (e.g., ‘clean’, ‘rinse’), verbs of air expulsion (e.g., ‘sneeze’), verbs of sound emission (e.g., ‘rattle’, ‘buzz’), etc. (see Goldberg, 1995 and Rohde 2001 for a more detailed analysis of verb classes that participate in the expression of caused-motion in English). A plausible explanation for this discrepancy has to do with event structure differences between the intransitive and the caused-motion construction. Specifically, the external cause involved in the caused-motion construction is the instigator of the figure’s movement and, therefore, it naturally determines the spatial source of the motion event, thus supplying a strong sense of directionality and dynamicity (Lewandowski 2020b; Rohde 2001). The fact that the structure of the construction already provides a default starting point of the path (i.e., the location of the external force) allows the construction more flexibility to leave the motion component underspecified in the lexical semantics of the verb. In other words, the intransitive and the caused-motion constructions differ with respect to the ease with which the semantic component of directed motion can be recovered, with the caused-motion construction showing a stronger directional force than the intransitive motion construction due to the presence of external causation. Given a high degree of directionality at the constructional level, the caused motion schema is less restricted when it comes to the compatibility with non-motion verbs.

The second observation concerns iconicity effects. Specifically, as was the case with self-motion, the compatibility between verbs and caused-motion events is correlated with the structural distance between the framing event and the verb root. That is, the nonprefix-framed pattern accepts the broadest range of verb classes including verbs inherently lexicalizing caused motion (e.g.,

‘remove’, ‘pull’), verbs pragmatically implying caused motion (e.g., ‘saw’, ‘rinse’), and verbs that do not imply caused-motion (e.g., ‘think’, ‘laugh’). In turn, the prefix-framed construction accepts the first two groups of verbs but not the third one. Finally, the V-framed pattern imposes the tightest restrictions on verb semantics and is limited to verbs that inherently specify caused-motion.

In short, the caused-motion construction diverges from the intransitive motion construction with respect to restrictions on verb semantics due to event structure differences, while at the same time both types of constructions show similarities with respect to iconicity effects on the relationship between framing event and verb root.

6. Conclusions

Based on data from three genetic families, Germanic, Romance, and Slavic, we have argued for a construction-based approach to the expression of motion. We have shown that cross- and intra-linguistic variability can be straightforwardly accounted for in terms of constraints on verb-construction mappings. These constraints are shaped by different factors including verb semantics, the formal relation between framing event and verb root, and event structure.

Starting with verb semantics, we have shown that the verbs that appear in motion constructions do not divide into two strictly delimited types, i.e., path and manner verbs, as is generally assumed in typological studies in the spirit of Talmy (1991, 2000). Instead, they form a more complex cline of semantic classes with varying degrees of match/mismatch with the meaning of the constructional template. The verbs compatible with self-motion events can be arranged along a scale based on the ease with which the directed motion interpretation can be obtained. On one end are prototypical path verbs such as ‘enter’ and ‘exit’ which inherently specify the trajectory along which the figure moves. Next to path verbs are directional manner verbs such as

1198 'run' and 'jump' which do not encode path in their lexical semantics, but pragmatically entail
1199 motion along a spatial axis. Directional manner verbs are followed by pure manner verbs such as
1200 'dance' and 'float' which do not evoke the notion of directionality. On the other end of the
1201 continuum are nonmotional manner verbs such as 'whistle' and 'crash' which do not encode
1202 motion but have the ability to specify the manner in which motion is performed. Even though a
1203 more detailed study is necessary to better understand the semantic factors underlying the
1204 expression of caused motion, our preliminary study of the data suggests that here too the verb types
1205 can be placed on a continuum. For example, causative path verbs such as 'remove' and 'insert'
1206 and causative directed manner verbs such as 'push' and 'throw' encode caused motion in their
1207 lexical semantics. These verbs are followed by e.g., cutting verbs such as 'saw' and 'slice' and
1208 cleaning verbs such as 'clean' and 'rinse', which do not intrinsically lexicalize caused motion, but
1209 are associated with a conventional scenario that evokes the motion of the figure/theme. On the
1210 other extreme of the continuum are verbs such as 'laugh' or 'think' which neither lexicalize nor
1211 are pragmatically associated with caused motion, but are able to specify the causing event. Not
1212 surprisingly, the position of the verbs on the cline of self-/caused-motion semantic classes is
1213 relevant to their argument structure properties, with verbs located toward the right extreme of the
1214 cline showing the most restricted and verbs located toward the left extreme of the cline showing
1215 the least restricted compatibility with motion constructions. Importantly, the distinction between
1216 semantic classes is often based on a combination of lexical semantics with encyclopedic
1217 information. For example, it is thanks to our world knowledge that the very important distinction
1218 between directed *vs.* pure manner verbs (e.g., 'jump' *vs.* 'dance') or between verbs that are
1219 conventionally associated *vs.* not associated with caused-motion (e.g., 'saw' *vs.* 'laugh') can be

established. Therefore, not only semantics but also pragmatics plays a crucial role in the realization of argument structure.

Turning next to the formal relation between framing event and verb root, we have observed that the closer the formal distance between the verb and the framing event, the closer the semantic relation between them, and, conversely, the greater the formal distance between the verb and the framing event, the looser the semantic relation between them—a pattern that not only illustrates the proximity principle put forward in studies on iconicity, but also suggests strong lexicalization effects. Specifically, regardless of event type, when the framing event and the verb root are one and the same morpheme (i.e., V-framing), the meaning of the verb typically coincides with the meaning of the constructional template. By contrast, when the framing event is encoded outside the verb root (S-framing), the verb has more freedom to express notions that are not part of the constructional meaning. At the same time, however, there are important differences within the S-framed lexicalization pattern. Namely, motion constructions associated with morphologically free elements such as particles and prepositions (nonprefix-framing) allow for a greater mismatch between verbal and constructional meaning than motion constructions associated with morphologically bound prefixes (prefix-framing). Importantly, this pattern of similarities and differences expands earlier classifications in which S-framing is generally regarded as a monolithic category.

One further dimension that shapes verb-construction mappings are event structure differences between the intransitive motion construction and the caused-motion construction. Specifically, the caused-motion construction accepts a broader range of non-motion verbs than the intransitive motion construction—a discrepancy that is due to the presence of the external cause involved in caused-motion events but absent in self-motion events. The external cause naturally

determines the spatial source of the motion event and, therefore, brings about a strong sense of directionality. The fact that the notion of dynamicity is already involved in the syntactic make-up of the construction allows the verb more freedom to leave the motion component unspecified.

In sum, intertypological, intratypological, and intralinguistic variability can be regarded as an epiphenomenon of the availability of particular verb-construction mappings in the world's languages. As such, a typology of motion constructions, while not mutually exclusive with a two-way typology of languages, provides an empirically more adequate characterization of motion encoding patterns. Further research involving a broader set of languages is required to provide a more complete account of the role of the interactions between abstract argument structure constructions, framing type, and verb semantics in determining possible and impossible motion event patterns across and within languages.

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