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Disentangling manner and path Evidence from varieties of German and Romance

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The standard theory of lexicalization patterns in the encoding of motion events (STLP in the remainder of this chapter; cf. Talmy 1985; Slobin 1996b; Talmy 2000, 2009) has been used in such a great number of research projects in the past two decades that its extensive introduction is superfluous. However, in this contribution I argue that that some of the claims of 'mainstream' STLP research are problematic, both from an empirical and from a theoretical point of view. Instead of discussing the fundamentals of the theory, I focus directly on the aspect of the approach particularly relevant to this chapter, namely the causal relationships that are presupposed between the expression of two semantic domains, the domain of manner (of motion) and the domain of path.

Keywords: lexicalization pattern, manner, motion event, path

1. The standard theory of motion event encoding

Talmy, both in his 2000 book and in a more recent article (2009), leaves no doubt that the main criterion to attribute satellite-framed or verb-framed status to a language is the locus of expression of path:

Note that this concept of framing type makes no appeal to the presence vs. absence of a co-event or its characteristic location, but only to the characteristic location of the Path, which unlike the co-event is seen as criterial to a Motion sentence. (Talmy 2009:390)

Thus, the status of satellite- vs. verb-framing is determined solely on the basis of the part of speech in which path is 'typically' expressed. Two entailments follow directly from this definition: First, the status of a language depends on the question of how 'typical' expression of path should be (empirically) determined. All problems of internal and external validity well known from any serious empirical study apply to this operationalization.

There is a second entailment that arises from the passage quoted above: Since Talmy insists on the locus of path and not of co-event as main indicator for attributing satellite- vs. verb-framed status to a language, there is no automatic prediction with respect to either the syntactic locus of manner expression or its mere presence in the motion verb clause. At least in this passage, therefore, Talmy does not directly articulate the second claim that can be found in many other publications in motion event research that are based on Talmy's paradigm, namely that there is an intrinsic link between satellite- or verb-framed status of a language and the expression of manner, as in the following quote from Gentner (2006: 545):

Talmy showed that languages differ in which semantic elements are incorporated into motion verbs: the path of the moving figure (as in Spanish), the manner of its motion (as in English), and/or the shape of the moving figure (as in Atsugewi).

Since Talmy's own work is based largely on deductive reasoning and less on corpus analyses, many researchers rightly refer to Slobin's important empirical contributions to the field and his concept of gradual manner-saliency in satellite-framed languages, as e.g. Cardini (2008: 534):

Slobin (e.g. 2003, 2004) has repeatedly observed that because the encoding of manner through the satellite-framed construct does not require any addition to the phrase, S-language speakers are facilitated and encouraged to express manner information, at least when compared to V-language speakers.

The fundamental argument that can be found in many contributions in the field is that the preferential mapping of path onto satellites 'encourages' or even 'forces' speakers to express manner in the motion verb. The rationale seems to be that since there is an unused slot available, this slot has to be used for the expression of manner, or more generally the expression of co-event semantics. In his more recent contributions, Slobin (2006) refers to this idea in terms of psycholinguistic processing load and argues for a 'low-cost' theory of manner integration: If the verb slot is available, then it is filled with manner verbs, if no verb slot is available, manner is only expressed if it is relevant for the current discourse.

In verb-framed languages, manner must be expressed in some kind of subordinate element, such as a gerund or other adverbial expression ('exit flying'), whereas in satellite-framed languages the main verb of a clause is available for the expression of manner ('fly out' in Germanic, 'out-fly' in Slavic, etc.), providing a "low cost" alternative to adjunct expressions of manner such as 'exit flying' or 'exit with a flap of the wings.' I will suggest that this apparently trivial processing factor of relative "cost" of encoding manner has widespread consequences for both the lexicon and discourse patterns of a language, with probable effects on cognition.

(Slobin 2006: 62)

The widespread consequences evoked in the quote relate to the amount of manner expression in different languages, to different narrative styles that are deemed to emerge as a consequence of these lexicalization patterns, and in differences in cognition, i.e. different degrees of attention to manner of motion in the sense of Slobin's thinking for speaking hypothesis (1996a). Empirically, the claims formulated in STLP were and can be tested using different methodologies. Processing research can focus on the ease or difficulty of different constructional variants of expressing manner, experimental research can investigate the behavioral correlates to the alleged typological differences, and corpus research can test the different hypotheses regarding the locus of path and manner expression and their mutual interdependence.

The present study is to be considered a contribution to the latter field, and its main goal is to test the widespread claim in STLP (see the quotes by Cardini and Gentner above) that there is an intrinsic link between the status of satellite- vs. verb-framing and the amount of manner expressed in the motion verb clauses.

The following basic assumptions guide the analyses in the remainder of the chapter:

1. The term ‘language’ is an abstraction by linguists and should not be construed as an agent doing anything with or to speakers. Contrary to the widespread assumption in motion verb and other research related to linguistic relativity, languages don’t do anything (“Languages that characteristically map the core schema into the verb” (Berman and Slobin 1994: 119), but speakers do. This is not to build up a straw man: I am perfectly aware of the fact that authors such as Slobin and many others in the field share my basic assumption that language is social practice and that the agent in language use, change, and variation is the speaker-hearer rather than some abstract ‘system’. Nevertheless such essentializing framing of language as an agentive entity is not unproblematic, in particular with respect to their potential to trigger simplistic and deterministic Whorfian views of what languages and cultures ‘do’ to speakers. Such views not only lack empirical plausibility, they are also prone to abusive instrumentalizations e.g. in language policy debates.

2. ‘Languages’ such as French, English, German, or Atsugewi are bundles of sociologically, stylistically, and regionally stratified usage patterns. The boundaries of languages are notoriously unclear (is Gallego a language or just a Galician dialect of Spanish?) and there are no purely linguistic grounds that license decisions on the ‘language status’ of a particular set of linguistic practices. As a case in point, Romansh, one of the languages investigated in this chapter, has been claimed to be a *dialect* of Italian by the Italian irredentist movement and declared the fourth Swiss national *language* in a popular vote in 1938. The exclusive focus on corpora of standard variants of languages, often produced by highly literate speakers (or their offspring), provides the linguist only with limited external validity. This is a trivial claim that has been made by sociolinguists for at least 50 years and by dialectologists for more than 200 years. Most of the mainstream motion event research does not take into account this problem, and predictions e.g. regarding the relative size of motion verb inventories in ‘languages’ are made without taking into account at least 40 years of research on the social, regional, and contextual variability of language usage patterns. It remains thus an open question whether the differences across languages found in motion verb research, e.g. larger repertoires in satellite-framed languages and smaller repertoires in verb-framed languages, are due to structural differences in lexicalization patterns as claimed by STLP or to other confounded variables, such as social strata (see e.g. Hart and Risley 1995), literacy education, gender, bilingualism, and/or language contact, or any other relevant mix of factors.

3. The typological status of a particular language is to be determined empirically, based on corpora, and not via introspection or via genealogical inheritance. Claims on ‘Semitic’ or ‘Germanic’ (as e.g. in Talmy 2000: 222) are thus not results of corpus based studies but genealogically motivated typological predictions about groups of languages calling for empirical investigation.

4. Typological differences across languages and varieties need to be investigated using appropriate statistical procedures. The still predominantly applied descriptive approach

in the field, juxtaposing central tendencies of ‘languages’, usually in the form of means of motion or path verb usage in a corpus, with respect to the expression of manner, path, or both should be complemented by techniques that at least mirror the variability within categories and that test differences with respect to their statistical meaningfulness for external validity.

5. The question whether manner and path are related to the same domain or not remains an open question as long as there is no converging evidence from studies that have coded large corpora independently – and not biased by Talmy’s primary focus on path – for expression of manner and path. The null hypothesis, in my view, should be that the two may well overlap to some extent but are nevertheless unrelated or only loosely connected. Expressing *how* displacement takes place is not the same as expressing the *whereabouts* of a figure entity, and although one can express both aspects in one clause in many languages, this does not necessarily imply that the two domains have to be treated as two aspects of one type of event construal. Only if systematic evidence shows that they are in fact related can researchers assume that manner and path are two aspects of one semantic domain.

2. Data and stimuli

The data discussed below were collected with the usual Frog Story elicitation procedure (see Strömquist and Verhoeven 2004 for an overview of the Frog Story research). The informants were native speakers of different varieties of Romance and Germanic (cf. Table 1). They could prepare their oral narration as long as they wanted, and they could use the picture book as they were retelling the story.

Table 1. Informants and varieties in the sample

Variety	Label	# of Frog Story narratives
Sursilvan	RO_SUS	10
Vallader Ladin	RO_VAL	10
Surmiran	RO_SUM	10
Standard High German	SHG	20
Muotathal Swiss German	SG_MU	26
Berne Swiss German	SG_BE	10
Sense Swiss German	SG_SE	10
Wallis Swiss German	SG_WS	4
French (Standard Swiss)	FR	20

The Swiss German data stem from native speakers of different areas of German-speaking Switzerland; all are produced in their respective Alemannic dialects, all of which are significantly different from Standard High German. The Standard Language is the Swiss Germans’ second language (cf. Ferguson 1959 on the Swiss German language situation; Berthele 2004b; Haas 2004). The Standard German data were collected with informants from different areas of Germany, all having a variety of German as their first language that is close to the idealized German standard (both in the informants’ self-assessment and in

the field-workers view). Romansh is a minority language spoken in the eastern Swiss Alps (Liver 1999; Darms 2006). It is genealogically Romance and its usage in the traditional areas has been pushed back towards the Alps by continuing immigration of speakers of German varieties since medieval times. The Romansh data were collected with native speakers of three different variants (“idioma”) of Romansh. All speakers of Romansh nowadays are at least bilingual with (Swiss) German and often other languages. The French data all stem from native speakers from French-speaking Switzerland (see Knecht 2000).

The data are part of a larger project on spatial language described extensively in Berthele (2006, 2008). For the purposes of this chapter, we focus exclusively on four dependent variables. All of these variables are subject to predictions that can be derived from STLP. These predictions are given in Table 2, together with references.

Table 2. Predictions of the standard theory of lexicalization patterns (STLP)

Dependent variable	STLP rationale	References
% of path verbs used in motion verb clauses	determine the status of language as satellite- or verb-framed	Talmy 2000
% of manner verbs used in motion verb clauses	speakers of satellite-framed languages should use many and many different manner verbs	Slobin 1996b
% of complex path predicates	speakers of satellite-framed languages tend to elaborate path by accumulating satellites	Berman/Slobin 1994; Slobin 1996b
mean number of ground elements per clause	speakers of satellite-framed languages tend to elaborate path by accumulating ground elements in PPs	Berman/Slobin 1994; Slobin 2004

A detailed analysis of these and other dependent variables can be found in Berthele (2006). In the following sections, I first give a descriptive analysis of the variation with respect to these four variables across the different varieties in the sample (Section 3). Second, I present inferential statistical analyses that address the question whether the differences found in the data are significant and in which respects other variables, such as those mentioned in the introduction of this contribution, act as predictors of the usage patterns observed (Section 4). A discussion in Section 5 concludes the chapter.

3. Comparison of varieties

In a first step, the different varieties in Table 1 are compared regarding the four dependent variables listed in Table 2. Due to their small numbers of informants, Wallis and Sense German were fused to one category in the plots below.

3.1 Path verbs

As has been noticed in the literature many times, speakers of a given language can make use of different lexicalization patterns in the motion verb repertoire at that same time. It comes thus as no surprise that path verbs can be found in all languages of our sample; cf. Examples (1)–(4):

(1) la grenouille sort du bocal (FR)

the frog exits the jar

(2) und er steigt auf den Stein (SHG)

and he ascends onto the rock

(3) und der Jakobli ghiid hinde ufs füdlen abbe (SG_MU)

and the Jakob-dim falls back onto-the bottom down

(4) tgèl è do cun glas e tot or da fanestra (RO_SUS)

that he is fallen with glass and all out-of window

As Talmy (2009) notes, the crucial question in order to determine the satellite- or verb-framed status of a language is the ‘canonical’ or ‘typical’ mapping of path. This is thus an empirical question, and Figure 1 shows the distribution of path verbs across our sample.

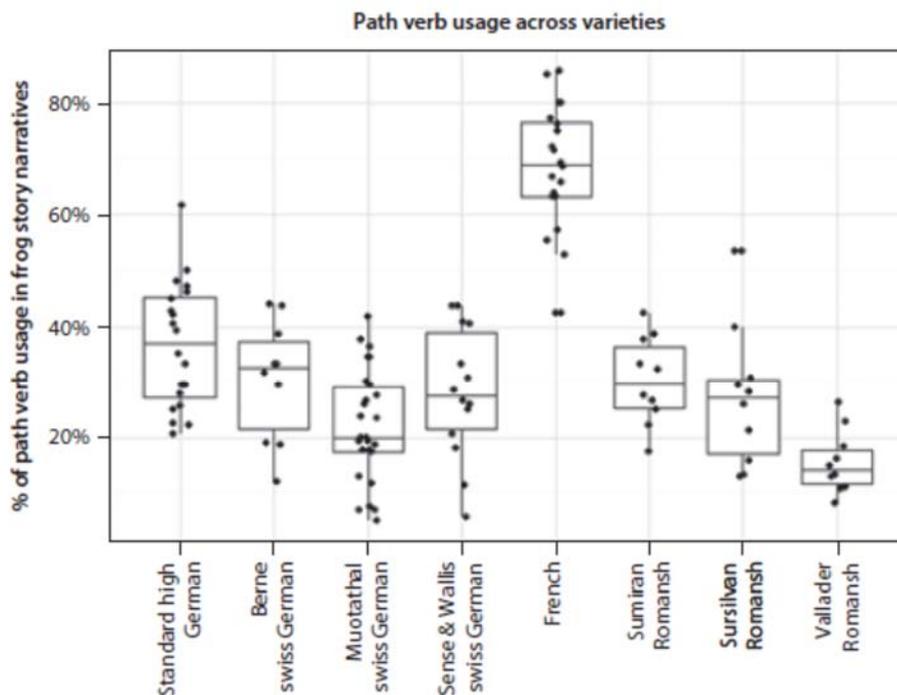


Figure 1. Scatter and box plot for the proportion of path verb usage in the sample

There are two main conclusions that can be drawn from Figure 1. First, there is only one language whose speakers tend to use path verbs in more than half of the motion verb

clauses: French. Speakers of all other languages, regardless of their being genealogically Germanic or Romance, only occasionally use path verbs. Secondly, within each language category, there is considerable variation; in all cases but French they range from virtually no path verb usage to a considerable amount of verb integration, as in the case of Standard High German. Figure 1 shows that if we apply the usual criterion of mean path verb usage within a sample of speakers of a particular language to determine the status of the language, only French is a verb-framed language. The figure shows also, however, that there are some speakers of Standard High German who use as many path verbs as some speakers of French, or even more. On the other hand there seems to be a continuum of path verb usage across the satellite-framed languages. These differences are not statistically random but can be systematically related to predictor variables, as is shown below.

3.2 Manner verbs

- | | | |
|------|--|----------|
| (5) | il saute sur la ruche
<i>he jumps onto the beehive</i> | (FR) |
| (6) | il court comme un fou dans la forêt
<i>he runs like a fool into the wood</i> | |
| (7) | et l'enfant a grimpé sur l'arbre
<i>and the child has climbed upon the tree</i> | |
| (8) | so schlich er sich leise aus seinem Terrarium
<i>so crept he refl silently out-of his:dat terrarium</i> | (SHG) |
| (9) | dass de gugger da so umeschwirrt
<i>that the cuckoo there around-whirs</i> | (SG_MU) |
| (10) | ma oha, cò saglia or ena tschuetta
<i>but whoops, here jumps out an owl</i> | (RO_SUS) |

Again, speakers of all languages in the sample express manner of motion to a certain extent in the verb slot (cf. Examples (5)–(10)). Figure 2 shows the box and scatter plots across the sample.

As expected, speakers of the verb-framed language French give rise to a relatively low central tendency when it comes to manner verb usage. At the other extreme, speakers of Standard High German show very high proportions of manner verb usage. Again, within the satellite-framed languages (all languages with the exception of French), there is considerable variation, with some speakers using virtually no manner verbs at all and surprisingly low central tendencies for all Romansh and some Swiss German varieties. As has been shown in detail in Berthele (2006), the differences across the different varieties are in some cases statistically significant, and we return to this question in the concluding sections where a different (compared to Berthele 2006) and probably more adequate analysis of these variation patterns is presented.

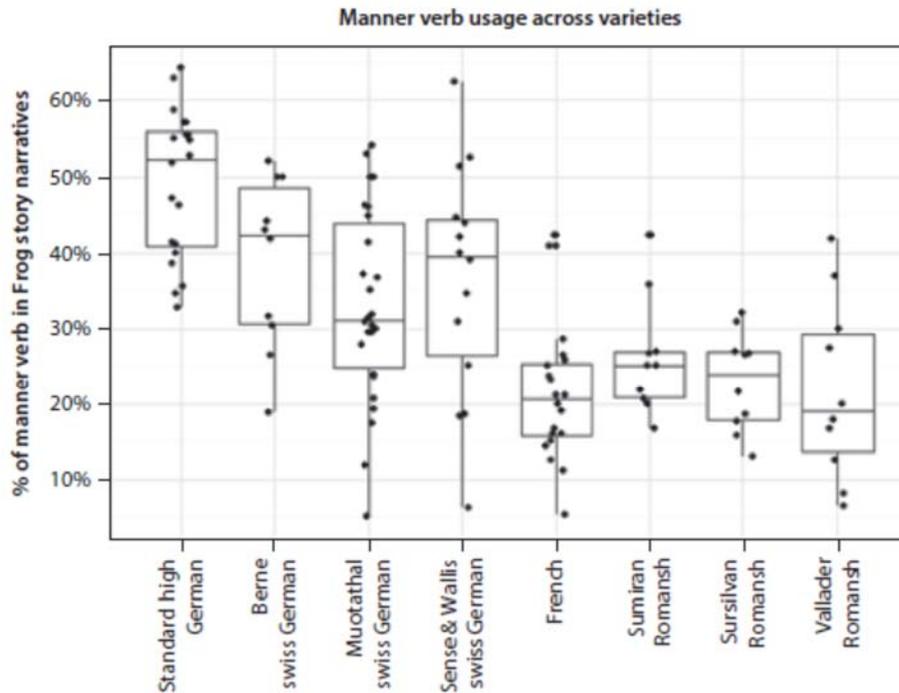


Figure 2. Scatter and box plot for the proportion of manner verb usage in the sample

3.3 Complex path descriptions and ground elements

As has been noted in Berman and Slobin (1994) and Slobin (2004), speakers of satellite-framed languages were found to produce considerably more path detail in motion verb clauses. This can be done with respect to more overt and/or more detailed descriptions of paths (or sub-segments of paths, cf. Examples (11)–(12)) or by adding more ground elements, as illustrated in Examples (13)–(14).

(11) E lu ein ei i ora sils praus (SUS)
and then are they gone out on the meadows

(12) er hed en inne Teich appe grüert (SG_MU)
he has him into-the:acc pond down thrown

(13) de hirsch hed ne da übernes bord abbegrüert ine täich ine (SG_MU)
the deer has him here over-a:acc bank down-thrown into-a pond into

(14) hederne vom fänschter abbeghiit id straas abbe (SG_MU)
has-he-him from-the:dat window down-thrown into-the street down

Figures 3 and 4 show the degree of path and ground element elaboration in our data. Figure 3 shows the percentage of motion verb clauses that are characterized by the integration of more than one simple path segment. The figure includes both redundant expression of the same path aspect (as the in relation in Example (13)) and complementary path elaboration (as in Examples (11) and (12)). As has been shown in Berthele (2006), the former is more typical for Swiss German varieties, and the latter more typical for Romansh varieties.

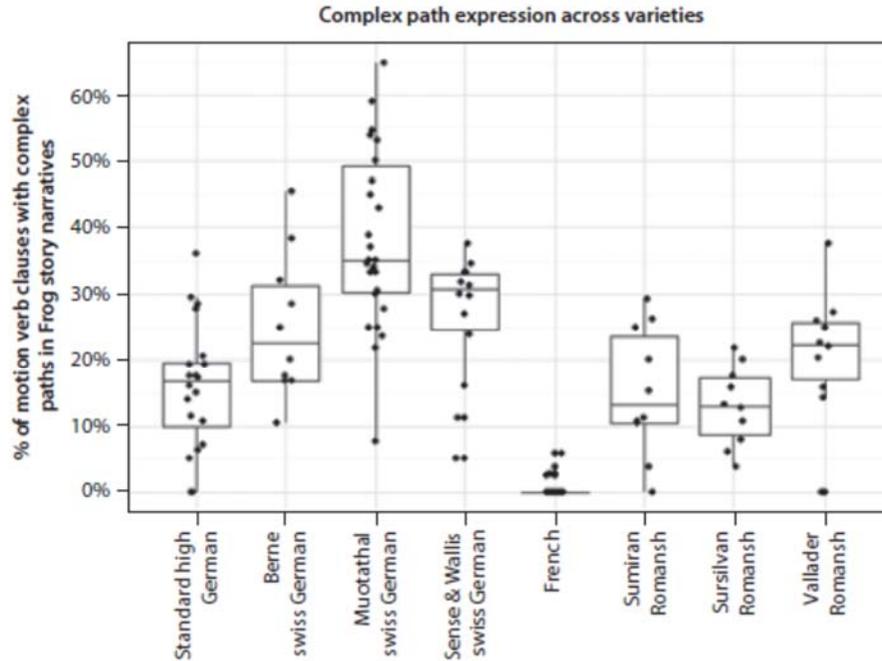


Figure 3. Complex path expression across the sample

Complex path expressions are very rare in French. Speakers of Muotathal Swiss German, on the other hand, show a tendency to pack rich path details into their motion verb clauses. Speakers of the other satellite-framed varieties are again located on a continuum. Related to this elaboration of path by using adverbs and coordinated prepositional phrases as in the examples given above is the possibility of adding one or more ground elements into the motion verb clause. Neither a verb-framed nor a satellite-framed language categorically need mention the ground elements, as in clauses such as 'he went out' the ground can be left implicit. Figure 4 shows the average number of ground elements per motion verb clause across the different varieties.

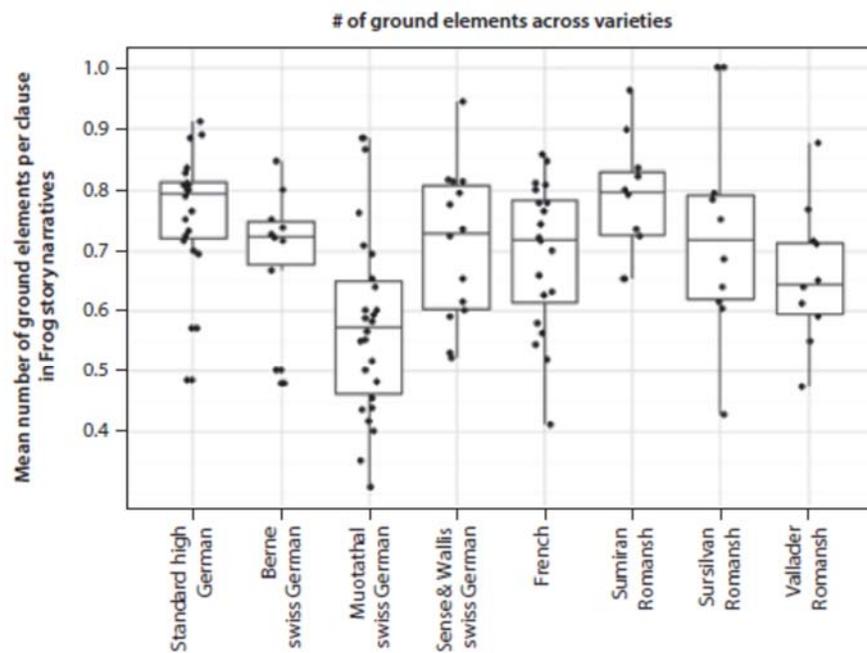


Figure 4. Mean number of ground elements per motion verb clause across the varieties in the sample

Figure 4 shows that there is a converging tendency towards an average of 0.8 ground elements per clause across all varieties, again with considerable interindividual variation across the speakers. Only one variety shows a relatively low median for this variable, which indicates that in Muotathal Swiss German there are many motion verb clauses without explicit ground elements produced. French does not seem to differ from the other varieties with respect to this variable, which is not in line with the STLP accounts quoted above. Both variables (ground elements and complex paths) are analyzed with respect to statistically meaningful differences below.

3.4 Intermediate summary

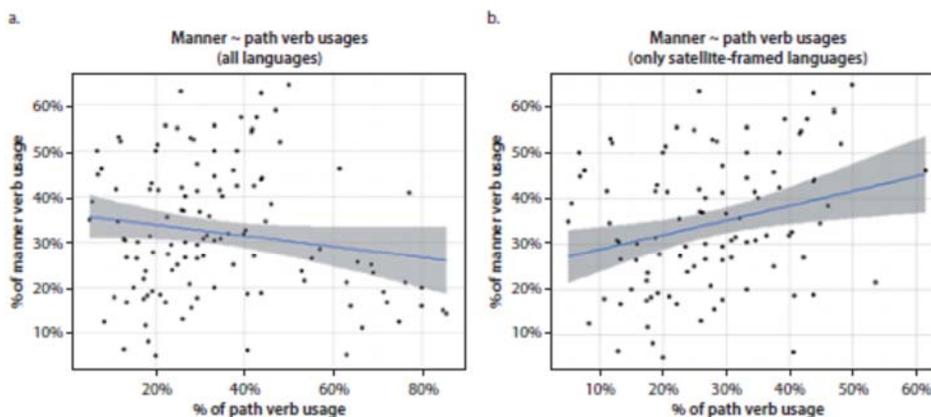
Figure 1 suggests that there is only one verb-framed language in the sample, French. Speakers of all other languages tend not to use path verbs as the default way of motion event description. On the other hand, there is considerable variation with respect to all dependent variables: There is a continuum not only of path verb usage, but also of manner verb usage and of path elaboration both within and across languages and varieties. The figures on path and manner usage distributions (Figures 1 and 2) suggest that the link between manner and path verb usage does not follow a simple logic of either/or. There is rather a unilateral predictive relationship: If the main way of describing motion is via path verbs, then manner verbs are obviously an infrequent choice. If path verbs are

not the dominant pattern, speakers can either use manner verbs or not. If they do not use generic verbs such as *come* and *go* (that, in line with the practice in the field, have not been coded as path verbs), or even lighter verbs such as modal verbs or simply ‘to be’, as in Examples (15) and (16) (see Berthele 2007).

(15) är isch ufe baum (SG_MU)
he is upto-the:acc tree

(16) Paulin e tgaun ein sur la pézza giuado cheu (RO_SUS)
Paulin and dog are over the rocks down here

As shown in Figures 5a and 5b, there is no noteworthy linear correlation between the usage of manner and path verbs, neither in all languages of the sample ($r = -0.16$) nor in the satellite-framed subsample. In the latter case, the weak correlation ($r = 0.27$) is even a positive one, i.e., the more manner verbs are used, the more path verbs are used as well. This does not tie in at all with the STLP and certainly not with the processing cost theory suggested by Slobin (2006): since it would be, from a processing point of view, ‘cheap’ for speakers of satellite-framed languages such as Romansh Vallader or Muotathal Swiss German, to integrate manner verbs, they ‘should’ do so. But quite obviously, only some of them do and others do not.



Figures 5a & 5b. Path and manner verb usages for all (left, a) and for the satellite-framed languages (right, b) in the sample.

There is thus considerable variance in the data that cannot be accounted for by STLP. The data suggest that there is no intrinsic relationship between the absence of path verb usage and manner verb usage. The evidence in Figure 5b rather points to different degrees of elaboration in the verb repertoire overall, regardless of manner or path. This evidence thus calls for the integration of additional factors that act as meaningful predictors for the elaboration of the verb slot and for the other dependent variables discussed above. Potential candidates for such factors can be found in the sociolinguistic literature, e.g. the education of speakers and their socio-economic status, but also gender, or other individual variables. As always, not all potentially relevant variables could be elicited in

this project, e.g., one could and maybe should consider variables such as verbal intelligence or language learning aptitude. But some predictors deemed to be important were included and are tested statistically in Section 4 of this chapter.

Before we proceed to this statistical analysis, one of the independent variables is separately discussed. Along the lines of research on orality vs. literacy (Koch and Oesterreicher 1994) and gradual shift from more pragmatically organized towards syntactically organized language (Givón 1979), I have argued in Berthele (2006) that the different languages in our sample can be placed on a continuum from relatively standardized European languages such as French and, to a lesser extent, Standard High German, to mainly orally used, rarely written dialectal varieties such as Swiss German or Romansh. Although there are written traditions, above all for Romansh, but to a certain extent also for Swiss German, the language of schooling (in the case of Swiss German) or at least of higher education and business, in both the Romansh and the Swiss German cases, is Standard High German, i.e. not the native-language of our participants (for language choices in the Romansh communities cf. Solèr (1983)). It is thus imaginable that these varieties, due to their usage pattern of languages of proximity, shaped by conceptual orality, conform to other constraints when it comes to narrative styles and coding of motion events (or maybe of events in general) than standard languages. According to Koch and Oesterreicher (1994), conceptual orality involves low type-token ratios in the open class lexicon of certain domains (but not of others), elliptic expressions, generalized usage of semantically relatively light verbs, or the frequent usage of dummy or *passerpartout*-words, among other features. In terms of social networks we can hypothesize that smaller speech communities are typically characterized by dense and multiplex social networks (Milroy

1992) and thus a potentially larger amount of common ground knowledge. This difference arguably leaves its traces in the language usage patterns of the members of the speech community, since, very generally, more information can be considered taken for granted and less explicit forms of utterances are licensed. It is not my intention to make a simplistic argument for classifying dialectal/ oral varieties as being deficient or restricted when compared to standard languages. Examples (11)–(14) have shown the richness of path elaboration that can be found more frequently in such small varieties when compared to the standard languages. The point to be made here is a more nuanced one: Presupposing that smaller varieties are shaped predominantly for oral efficiency in tight-knit networks, we can hypothesize that they put emphasis on other aspects of linguistic elaboration than languages that have undergone many different stages of “Ausbau” (Kloss 1987), often involving calquing complex patterns of Latin or other prestige languages, lexical elaboration, and normative processes of sorting out usage patterns that are deemed ‘lowly’ or lacking prestige. Thus, although these smaller varieties are structurally identical to satellite-framed standard languages, they pattern in a measurably different way than the latter with respect to the spatial language variables we are interested in.

A first approach to explaining the unexplained variance in Figures 1–4 is to group the satellite-framed subsample of our varieties into small, medium, and large languages. The size of the variety has been roughly calculated by estimating the number of

speakers of the territories in which these languages are (officially or assumedly) spoken. Small languages are varieties spoken by fewer than 10,000 speakers (Muotathal Swiss German and Romansh Surmiran and Vallader). Medium-sized languages are varieties spoken by more than 10,000 but fewer than 1,000,000 speakers (Sense, Wallis and Bern Swiss German, Sursilvan Romansh). Large languages are the standard languages German and French, the latter not being included in Figures 6a–d.

The rationale behind this grouping is that we can assume that the smaller the speech community using and identifying with a particular variety, the more this variety is restricted to usages shaped by conceptual orality (language of proximity) in the sense of Koch and Oesterreicher (1994).

The four plots suggest a linear relationship between the four dependent variables and the size of the language: the larger the speech community, the more manner and path verbs and the more ground elements tend to be included in the Frog Story narratives. The complex path elaboration, however, seems to be a feature that tends to be more frequent in small languages (cf. Figure 6c).

The tentative explanation, arguing that conceptually oral features of small languages interact with the patterns in the motion verb data, seems consistent with the data. In the Section 4 we investigate whether the size of the speech community indeed turns out to be a statistically relevant predictor of the motion event variables, and how this variable acts as a predictor together with other independent variables.

4. Inferential statistics

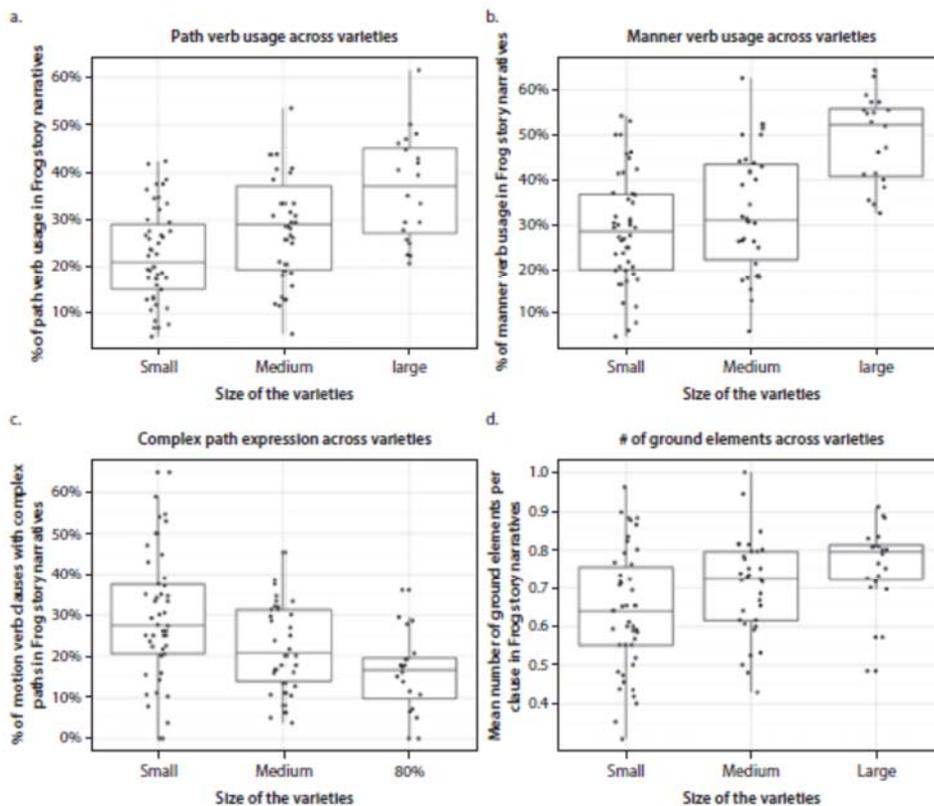
In Berthele (2004a, 2006), simple ANOVAS were used to assess the differences across the varieties in the sample with respect to the dependent variables operationalizing spatial language features of the narratives. The four most important of these dependent variables are discussed here, but the analysis procedures used here are slightly different. For the present purposes, all four of them are fed into a multivariate analysis of variance, using the *manova* function of R's stats package (Baayen 2009). Since there are obvious differences between French and all other languages with respect to most of the four variables discussed above, these analyses focus on the satellite-framed subsample only. Besides the fact that the statistical difference between French and most other varieties needs not be proven anymore here (Kopecka 2004; Berthele 2006), including the French data would violate the prerequisite of normally distributed variables for MANOVA in the case of the manner and path verb variables.

The model that is tested here includes the four dependent variables above and the following factors:

1. Size of the variety (1 small, 2 medium, 3 large)
2. Speaker's occupational status (blue collar vs. white collar)
3. Speaker's sex (M, F)

The grouping of the informants in blue and white collar occupation corresponds to an established practice in sociolinguistic and dialectological research: Informants are grouped according to their professional status into individuals carrying out

predominantly manual, physical tasks (farmers, mechanics, housewives, etc.) versus more socially oriented and or/desk work (doctors, teachers, clerks, etc.). The latter professions often require higher education and, most importantly for this study, regular use of literacy and cognitive academic language proficiency (CALP, see Cummins 1979). Only main effects are included, since an explorative analysis of the full factorial and other model variants including the interaction terms of factors had to be rejected after model comparison via R's anova procedure (Chambers and Hastie 1992). The results of the multivariate analysis are summarized in Table 3.



Figures 6a, b, c, d. The four dependent variables across small, medium, and large varieties.

Table 3. Multivariate analysis of three factors and four dependent variables

	Df	Pillai's trace	approx F	p
size of the variety	2	0.55266	8.8780	<0.001 ***
blue vs. white collar	1	0.13559	3.6079	<0.01 **
speaker's sex	1	0.05972	1.4607	=0.221, n.s.

Speakers' sex turns out to be not a relevant predictor for our dependent variables. Both

the size of the variety and blue vs. white collar occupation are significant predictors in the model, the size variable being more important than the occupational status of the informants. Since the speaker's sex turned out to be irrelevant (and an anova revealed that the simpler model without it fits the data better), a new model has been calculated with only the two remaining factors. The univariate statistics of this latter model are given in Table 4.

The univariate statistics obviously confirm the importance of the size variable. Additionally, it turns out that a higher level of education, as operationalized in the distinction between blue and white collar occupations, coincides with more usage of path verbs and more integration of ground elements in the motion event clauses. Both results are consistent with the idea that more education and more usage of language shaped by literacy in the professional domain, as is the case for white collar jobs, lead to a more explicit description of scenes (# of ground elements) and to a more elaborate verb repertoire in usage. The absence of such an effect for the manner verbs remains a puzzling fact for which I have no explanation at this point.¹

Table 4. Univariate analyses of two factors and four dependent variables

size of the variety SS III ¹			blue vs. white collar			
	F	p	SS III	F	p	
path verbs	0.26639	12.1	<0.001***	0.07164	6.5264	<0.05*
manner verbs	0.57368	18.6	<0.001***	0.00107	0.0692	=0.793
complex path	0.26998	7.9	<0.001***	0.00163	0.0953	=0.758
# of ground elements	0.20991	5.6	<0.001***	0.15630	8.3991	<0.01**

5. Discussion

The data and analyses presented in this contribution both confirm and put into question aspects of mainstream research on lexicalization patterns in the motion event domain. There is clear support for Talmy's and others' observation that speakers of French, when describing motion events, often resort to the usage of path verbs. All other languages in our sample show a more or less clear preference for satellite-framing, including the Romance varieties of Romansh. It is therefore important to refrain from categorical family attribution to one of the two (or three) lexicalization pattern types in Talmy (2000). Although the language contact argument, i.e. influence from German, seems immediately plausible for Romansh, other research on Romance languages (Kopecka 2004; Spreafico 2008) has shown a great deal of satellite-framing also in other varieties. There is a satellite-framed 'Crypto-Romance' tradition that has been neglected by mainstream research focusing on a selection of standard Romance only.

The most important conclusion from this contribution, however, is that the analyses call into question the commonly assumed co-occurrence of satellite-framing and manner saliency. The data from different satellite-framed varieties suggest that there is

¹ Since the manova function in R calculates type I sums of squares, type III sums of squares have been generated by calculating two models differing only in the order of the factors entered. The second term always generates sums of type III (marginal or orthogonal).

no such intrinsic link: A language may well quite systematically map path onto a satellite and therefore have the verb slot available for the expression of manner, but there is no 'magnetic' attraction exerted by this free slot to be automatically filled with manner verbs. Although there are instances in the literature where differences with respect to the amount of manner integration are discussed (see e.g. Slobin 2004 for an argument based on morphosyntactic structure in Russian), there has been no statistically supported research on other factors determining the size and the profile of motion verb repertoires (for analogous and thus supporting evidence from the posture verb repertoires cf. Berthele 2006). As has been shown in this chapter, factors that are independent of lexicalization patterns co-vary systematically with the spatial language variables. It seems thus important, when investigating questions of verb repertoires and saliency of manner (or path) in spatial language, to widen the horizon in several respects:

First, the intuitively plausible causality of available slots and the respective lexical elaboration has to be questioned.

Secondly, the construal of 'language' should be differentiated and social and geographical variation of language usage should be taken into account, just as language contact and learner language phenomena have been investigated in the last years (cf. e.g. Inagaki 2001; Hohenstein, Eisenberg, and Naigles 2006; Brown and Gullberg 2010). The somewhat unexpected co-variation with the size variable discovered in our data should be treated with caution: Although the pattern seems to be statistically robust across all dependent variables, its theoretical explanation sketched out in this contribution is tentative and awaits further confirmation by other data from other contexts.

Thirdly, and maybe most importantly, it remains an open question whether manner of motion and path are indeed related to the same referential domain. The absence of any noticeable correlation demonstrated in Figures 5a, b does not support the common assumption of a shared 'meta-domain' covering both path and manner expression made by many researchers in the field. Additional support for this doubt comes from a quite different type of research by Wälchli (2009). The author, after having analyzed all motion verb clauses in the Gospel according to Mark in 117 languages, states that there is a large amount of mixed languages (with respect to the satellite- vs. verb-framed typology) in the sample. Whereas this finding is certainly in line with many of the findings in mainstream motion event research, Wälchli makes a much more important observation that seems to be in line with the critical evidence presented in this contribution:

The idea that manner and route [=path, RB] are in competition for expression in motion events is a very suggestive aspect of the Lexicalization Pattern Theory. However, it turns out that the two semantic entities, even if both apply to motion events, are not relevant for the same kinds of motion events in a clear majority of cases. [...] Based on the material discussed in this section, we cannot state with any kind of certainty whether there is a general cross-linguistic correlation between lack of route verbs and the presence of manner verbs in typical route domains. If such a correlation exists, it is a very weak one, at best. (Wälchli 2009:211)

Since doubts regarding the conflation of the two semantic domains in Talmy's framework emerge from methodologically and linguistically diverse works such as the variationist approach presented here and the large-scale typological approach pursued by Wälchli, it seems to be time to put into question the flawed standard theory and to come up with a better account of the variation discovered and still to discover in the field of the linguistic construal of motion events.

References

- Baayen, Rolf Harald. 2009. *Analyzing Linguistic Data: A Practical Introduction To Statistics Using R*, 4th print. edn. Cambridge: Cambridge University Press.
- Berman, Ruth A. & Dan I. Slobin. 1994. *Relating Events In Narrative: A Crosslinguistic Developmental Study*. Hillsdale, N.J.: Lawrence Erlbaum Associates.
- Berthele, Raphael. 2004a. The typology of motion and posture verbs: A variationist account. In B. Kortmann, ed., *Dialectology Meets Typology: Dialect Grammar from a Cross-Linguistic Perspective*, 93–126. Berlin/New York: Mouton de Gruyter.
- Berthele, Raphael. 2004b. Vor lauter Linguisten die Sprache nicht mehr sehen – Diglossie und Ideologie in der deutschsprachigen Schweiz. In H. Christen, ed., *Dialekt, Regiolekt und Standardsprache im sozialen und zeitlichen Raum*, 111–36. Wien: Edition Praesens.
- Berthele, Raphael. 2006. *Ort und Weg. Eine vergleichende Untersuchung der sprachlichen Raumreferenz in Varietäten des Deutschen, Rätoromanischen und Französischen*. Berlin, New York: de Gruyter.
- Berthele, Raphael. 2007. Sein+Direktionalergänzung: Bewegung ohne Bewegungsverb. In L. Geist & B. Rothstein, eds., *Kopulaverben und Kopulasätze. Intersprachliche und intrasprachliche Aspekte*, 229–52. Tübingen: Max Niemeyer.
- Berthele, Raphael. 2008. The many ways to search for a frog story: On fieldworker's troubles collecting spatial language data. In J. Guo et al., eds., *Crosslinguistic Approaches to the Psychology of Language. Research in the Tradition of Dan Isaac Slobin*, 163–74. New York: Psychology Press.
- Brown, Amanda & Marianne Gullberg. 2010. Changes in encoding of path of motion in a first language during acquisition of a second language [2010/05/01]. *Cognitive Linguistics* 21: 263–86.
- Cardini, Filippo-Enrico. 2008. Manner of motion saliency: An inquiry into Italian. *Cognitive Linguistics* 19: 533–69.
- Chambers, J.M. & T.J. Hastie. 1992. *Statistical Models in S*. Pacific Grove: Wadsworth & Brooks/ Cole.
- Cummins, J. 1979. Cognitive/academic language proficiency, linguistic interdependence, the optimum age question and some other matters. *Working Papers on Bilingualism* 19: 197–205.
- Darms, Georges. 2006. Sprachplanung, Sprachlenkung und institutionalisierte Sprachpflege: Bündnerromanisch. In E. Gerhard, M.-D. Glessgen, Ch. Schmitt & W. Schweickard, eds., *Romanische Sprachgeschichte. Ein internationales Handbuch zur Geschichte der romanischen Sprache, 2. Teilband*, 1455–62. Berlin, New York: de Gruyter.
- Ferguson, Charles A. 1959. Diglossia. *Word* 15: 325–40.
- Gentner, Deirdre. 2006. Why verbs are hard to learn. In K. Hirsh-Pasek & R. M. Golinkoff, eds., *Action Meets Word: How Children Learn Verbs*, 544–64. Oxford, New

- York: Oxford University Press.
- Givón, Talmy. 1979. *On Understanding Grammar*. New York: Academic Press.
- Haas, Walter. 2004. Die Sprachsituation in der deutschen Schweiz und das Konzept der Diglossie. In H. Christen, ed., *Dialekt, Regiolekt und Standardsprache im sozialen und zeitlichen Raum*, 81–110. Wien: Edition Praesens.
- Hart, Betty & Todd R. Risley. 1995. *Meaningful Differences in the Everyday Experience of Young American Children*. Baltimore: Paul H. Brooks.
- Hohenstein, J. M., A. R. Eisenberg, & L. R. Naigles. 2006. Is he floating across or crossing afloat? Cross-influence of L1 and L2 in Spanish/ English bilingual adults. *Bilingualism: Language & Cognition* 9(3): 249–61.
- Inagaki, Shunji. 2001. Motion verbs with goal PPs in the L2 acquisition of English and Japanese. *Studies in Second Language Acquisition* 23: 153–70.
- Kloss, Heinz. 1987. Abstandsprache und Ausbausprache. In U. Ammon, N. Dittmar, & K. J. Mattheier, eds., *Sociolinguistics: An International Handbook of the Science of Language and Society*, 302–8. Berlin/New York: Mouton de Gruyter.
- Knecht, Pierre. 2000. Die französischsprachige Schweiz. In H. Bickel & R. Schläpfer, eds., *Die viersprachige Schweiz. 2., neu bearbeitete Auflage*, 139–76. Aarau: Sauerländer.
- Koch, Pter & Wulf Oesterreicher. 1994. Funktionale Aspekte der Schriftkultur. Schriftlichkeit und Sprache. In H. Günther & O. Ludwig, eds., *Schrift und Schriftlichkeit: ein interdisziplinäres Handbuch internationaler Forschung = Writing and its use: an interdisciplinary handbook of international research / zusammen mit Jürgen Baumann... [et al.]*, 587–604. Berlin, New York: de Gruyter.
- Kopecka, Anetta. 2004. *Etude typologique de l'expression de l'espace: localisation et déplacement en français et en polonais*. Lyon: Université Lumière Lyon 2, Thèse de doctorat.
- Liver, Ricarda. 1999. *Rätoromanisch. Eine Einführung in das Bündnerromanische*. Tübingen: Narr.
- Milroy, Lesley. 1992. *Language and social networks*. Oxford, Cambridge Mass.: B. Blackwell.
- Slobin, Dan I. 1996a. From 'thought and language' to 'thinking for speaking'. In J. J. Gumperz & St. C. Levinson, eds., *Rethinking Linguistic Relativity*, 70–96. Cambridge: Cambridge University Press.
- Slobin, Dan I. 1996b. Two ways to travel: Verbs of motion in English and Spanish. S. A. Thompson & M. Shibatani, eds., *Grammatical Constructions: Their Form and Meaning*. Oxford: Oxford University Press, 195–217.
- Slobin, Dan I. 2003. Language and thought online: Cognitive consequences of linguistic relativity. In Dedre Gentner and Susan Goldin-Meadow, eds., *Advances in the investigation of language and thought*, 157–191. Cambridge, MA: MIT Press.
- Slobin, Dan I. 2004. The many ways to search for a frog: Linguistic typology and the expression of motion events. In S. Strömquist & L. Verhoeven, eds., *Relating Events in Narrative: Typological and Contextual Perspectives*, 219–57. Mahwah, NJ: Lawrence Erlbaum Associates.
- Slobin, Dan I. 2006. What makes manner of motion salient? Explorations in linguistic typology, discourse, and cognition. In M. Hickmann & St. Robert, eds., *Space in Languages: Linguistic Systems and Cognitive Categories*, 59–81.
- Solèr, Clau. 1983. *Sprachgebrauch und Sprachwandel (Rätoromanen von Lumbrein)*. Zürich: Universität Zürich.
- Spreafico, Lorenzo. 2008. Lessicalizzazione di eventi di moto in italiano: problemi di

- tipologia. In G. Bernini, L. Spreafico, & A. Valentini, eds., *Competenze lessicali e discorsive nell'acquisizione di lingue seconde*, 139–59. Perugia: Guerra.
- Strömquist, Sven & Ludo Verhoeven. 2004. *Relating Events in Narrative: Typological and Contextual Perspectives*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Talmy, Leonard. 1985. Lexicalization patterns: Semantic structure in lexical forms. In T. Shopen, ed., *Language Typology and Syntactic Description. Volume III: Grammatical Categories and the Lexicon*, 57–149. Cambridge, London, etc.: Cambridge University Press.
- Talmy, Leonard. 2000. *Toward a Cognitive Semantics. Volume II: Typology and Process in Concept Structuring*. Cambridge, Massachusetts; London, England: MIT Press.
- Talmy, Leonard. 2009. Main verb properties and equipollent framing. In J. Guo et al., eds., *Crosslinguistic Approaches to the Psychology of Language: Research in the Tradition of Dan Isaac Slobin*, 389–402. New York, London: Psychology Press.
- Wälchli, Bernhard. 2009. Motion Events in Parallel Texts: A Study in Primary-data Typology. Bern: [unpublished manuscript].