Chapter 2

Slavic creation/consumption predicates in light of Talmy's typology

Alessandro Bigolin
Centre de Lingüística Teòrica, Universitat Autònoma de Barcelona

The chapter is concerned with the licensing of creation/consumption predicates in Slavic languages, in light of Talmy's (2000) typology. I present the results of a pilot study suggesting that Slavic languages behave as verb-framed languages in the domain of creation/consumption predicates, despite these languages being commonly regarded as a type of satellite-framed languages (Talmy 2000) referred to as "weak satellite-framed languages" (Acedo-Matellán 2010; 2016). Assuming a neo-constructionist view on argument structure, I propose a morphosyntactic account of Talmy's typology, according to which the verb-framed vs. satellite-framed distinction depends on a specific Phonological Form requirement. In verb-framed languages, the null functional head involved in verbal predication must, by assumption, incorporate its complement as an externalization condition. I propose that so-called weak satellite-framed languages, to which Slavic languages have been argued to belong, are fundamentally verb-framed languages, and that the availability of satellite-framed resultative constructions in these languages is granted by the lexical presence of result morphemes that can incorporate into *v* via prefixation.

1 Introduction

This chapter is concerned with the licensing of creation/consumption predicates in Slavic languages, in light of Talmy's (2000) typology. In creation/consumption predicates, the direct object is understood as being "created" or "consumed" during the event denoted by the predicate (Hale & Keyser 2002; Volpe 2004; Harley 2005; Mateu 2012, among others). For instance, *a hole* in (1a) is formed while the digging process takes place, and *the apple* in (1b) is consumed during the eating process.

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(1) a. He dug a hole in his garden. (Washio 1997: 46)
b. John ate the apple. (Folli & Harley 2005: 103)

The typological distinction proposed by Talmy (2000) divides languages into two broad classes, depending on how the Path (or "change") core component of resultative events of change of state and location is expressed.[1] In one class of languages, Path is typically encoded in a satellite (e.g., a particle, PP or AP) distinct from the main verb, which in turn may express a co-event.[2] The co-event usually provides information about the manner in which the main resultative event unfolds, or about the cause which triggers it.[3] In the other class of languages, Path is always encoded in the main verb, so that information about a co-event is either not expressed or provided via adjuncts. Languages of the former type are thus referred to as "satellite-framed", while languages of the latter type are referred to as "verb-framed". The examples from English (a satellite-framed language) and Spanish (a verb-framed language) in (2) and (3) illustrate the two patterns, for events of change of location and events of change of state respectively.

(2) Satellite-framed pattern (English):
a. The bottle [floated]$_{\text{CO-EVENT}}$ [into the cave]$_{\text{PATH}}$. (Talmy 2000: 227)
b. She [shot]$_{\text{CO-EVENT}}$ him [dead]$_{\text{PATH}}$. (Goldberg 1995: 136)

(3) Verb-framed pattern (Spanish):
a. La botella [entró]$_{\text{PATH}}$ ([flotando]$_{\text{CO-EVENT}}$) a la cueva.
the bottle enter.PST.AGR float.GER to the cave
'The bottle moved into the cave (floating).' (Talmy 2000: 227)
b. Lo [mató]$_{\text{PATH}}$ ([de un disparo]$_{\text{CO-EVENT}}$).
ACC.M.SG kill.PST.AGR of a shot
'He/she killed him with a shot.' (CORPES XXI[4])

Slavic languages, along with Latin, have been classified as "weak satellite-framed" (Acedo-Matellán 2010; 2016) since, although they allow the expression

[1] I consider an event "resultative" if it involves a scalar change along a scale that denotes a property or a path (Rappaport Hovav 2014).

[2] PPs are explicitly excluded in Talmy's (2000) notion of "satellite", defined as "[...] the grammatical category of any constituent other than a noun phrase or prepositional-phrase complement that is in a sister relation to the verb root" (Talmy 2000: 120). Following Mateu (2002), Beavers et al. (2010), Acedo-Matellán & Mateu (2013), Acedo-Matellán (2016), among others, I adopt a broader definition of satellite, which includes non-adjunct result PPs like the one in (2a).

[3] See Talmy (2000) for an exhaustive classification of possible conceptual interpretations attributable to co-events.

[4] *Corpus del Español del Siglo XXI*, Real Academia Española (2024).

of Path in a satellite, this must form a prosodic word with the verb. For instance, the object *svoju ručku* 'her pen' in (4) is understood to be brought into a state where all its ink is used up by means of the prefixal satellite *iz-* 'out', while the verb *pis-* 'write' specifies the co-event that causes the transition undergone by the referent of the direct object (Spencer & Zaretskaya 1998; Mateu 2008).

(4) Ona [iz]$_{\text{PATH}}$-[pis]$_{\text{CO-EVENT}}$-a-l-a svoju ručku.
she.NOM out-write-TH-PST-AGR POSS pen.ACC
'Her pen has run out of ink.' (Lit. 'She has written her pen out (of ink).')
(Russian; Spencer & Zaretskaya 1998: 17)

The satellite-framed/verb-framed distinction is also found in the domain of predicates denoting events of creation/consumption (Mateu 2003; 2012). In a similar way to (2), satellite-framed languages allow the expression of a co-event in the verb in creation/consumption predicates, giving rise to creation/consumption predicates of the type in (5a) (hereafter, "complex creation/consumption predicates"). The predicate in (5a) can be paraphrased as "make a hole in the coat by brushing", whereby it is clear that the main verb of the predicate is understood as specifying a co-event of the main event of creation. Verb-framed languages instead consistently express the event that leads to the creation/consumption of the direct object by means of the main verb, which may be either a light verb (e.g., *make*, as in the Spanish example in (5b)) or a verb whose meaning is likely to imply the creation/consumption of the object, which in turn is interpreted as a hyponym of the verb (as in (1); see Hale & Keyser 1997; 2002). The specification of a possible co-event, as in the verb-framed change-of-location/state examples in (3), is relegated to an optional adjunct.

(5) a. Brush a hole in one's coat. (Levin & Rapoport 1988: 279)
b. Hizo un agujero en su abrigo (al cepillar=lo).
make.PST.AGR a hole in POSS coat at.the brush.INF=ACC.M.SG
'She made a hole in her coat, by brushing it.'

A non-trivial difference between creation/consumption predicates and change-of-location/state predicates is that the argument structure of creation/consumption predicates has been argued to lack a Path component (see Rappaport Hovav & Levin 1998; Rappaport Hovav 2008; Rappaport Hovav & Levin 2010 for works adopting a lexicalist approach; see Hale & Keyser 1993; 2002; Mateu 2002; Harley 2005; Folli & Harley 2005; 2008; 2020; Ramchand 2008; Acedo-Matellán 2016, among others, for works adopting a neo-constructionist, syntactic approach). Accordingly, in light of contrasts like (5), Mateu (2012) concludes that a proper

descriptive account of the cross-linguistic variation associated with Talmy's typology should not be understood in terms of a requirement about the expression of Path (either in the main verb or in a verb's satellite), but rather in terms of whether or not a language allows the expression of a co-event in the main verb.

A prediction of this line of reasoning is that weak satellite-framed languages such as Slavic languages should allow complex creation/consumption predicates of the type in (5a), since these languages more generally display constructions where the main verb expresses a co-event (as exemplified in (4)). In this chapter, I present the results of a pilot study investigating the availability of different types of creation/consumption predicates in several Slavic languages, comparing them with data from bona fide satellite-framed languages and verb-framed languages. I provide evidence suggesting that Slavic languages behave as verb-framed languages in the domain of creation/consumption predicates, as they must resort to run-of-the-mill verb-framed strategies to express such predicates and rule out constructions such as complex creation/consumption predicates (Section 2). Assuming a neo-constructionist approach to argument structure (Mateu 2002; Borer 2005; Mateu & Acedo-Matellán 2012, among others), I propose a morphophonological account of Talmy's typology, which is argued to follow from a Phonological Form (PF) requirement, in verb-framed languages, on the null syntactic head *v* involved in verbal predication. I suggest that Slavic languages, and weak satellite-framed languages in general, should be considered as fundamentally verb-framed languages, predicting the unavailability of complex creation/consumption predicates in this class of languages (Section 3). Next, I explore the prediction – following from the present account – that a complex creation/consumption reading is available in Slavic languages for predicates that are perfectivized via so-called "internal" verbal prefixes (Svenonius 2004; Borik 2006; Gehrke 2008, among others), which have been argued to express an abstract result in a resultative construction (Gehrke 2008; Acedo-Matellán 2016; Kwapiszewski 2022, among others) (Section 4). Finally, I address some potential counterexamples from Latin (another weak satellite-framed language; Acedo-Matellán 2016) to the prediction that weak satellite-framed languages lack complex creation/consumption predicates of the type found in satellite-framed languages. I argue that Latin lacked such predicates in the same way as Slavic languages do, *pace* Acedo-Matellán (2016) and consistently with the predictions of the present account (Section 5). I draw general conclusions in Section 6.

2 Creation/consumption predicates in Slavic languages

In order to investigate the availability of complex creation/consumption predicates in Slavic languages, I carried out a pilot study to check, with the help of

native speakers, whether it was possible to directly translate different creation/consumption predicates that are licensed in satellite-framed English into several Slavic languages. I further examined whether it was possible to directly translate the English examples into four additional bona fide satellite-framed languages and five verb-framed languages, respectively. Effort was invested in gathering evidence from different language families, contributing to the diversity of languages represented in the collected data. For the class of satellite-framed languages, data were collected from Dutch, German, Chinese, and Hungarian. Regarding verb-framed languages, data were collected from Italian, Catalan, Spanish, Basque, and Greek. Finally, for the class of Slavic languages, data were collected from Russian and Ukrainian (East Slavic languages), Polish and Slovak (West Slavic languages), and Serbian and Croatian (South Slavic languages).[5]

2.1 The English data

The English examples range from constructions involving verbs whose meaning can be taken to imply the creation/consumption of the direct object, therefore using a verb-framed strategy, to constructions that can be taken to involve the expression of a manner co-event in the main verb, and which are expected to be ungrammatical in verb-framed languages.[6] The list of the selected examples, starting with verb-framed constructions, is provided in (6) to (24).[7]

(6) John sang a song. (Truswell 2007: 1361)

[5]Serbian and Croatian are considered individually alongside the other languages examined, notwithstanding classifications that see them as distinct varieties of a single language (e.g., Serbo-Croatian, or BCMS).

[6]The selection of the data was primarily based on examples from relevant literature pertaining to hyponymous objects, effected objects, and Talmy's typology. Additionally, some examples were taken from corpora or made up and subsequently checked with native speakers. Following Mateu (2002), I have included the examples in (18) and (19) as representatives of the class of complex consumption predicates, where the consumption of the direct object constitutes the main event denoted by the predicate, while the verb denotes a co-event. See Kuno (1973) and Condamines (2013) for possible examples of this type in verb-framed Japanese and French, respectively (I thank an anonymous reviewer for bringing my attention to the data analyzed in these works, which deserve further investigation).

[7]The examples have been arranged in the present order based on my own intuitions, as a native speaker of one of the verb-framed languages tested, about the degree of "manner" provided by the verb in each of them. Determining the degree of manner provided by the verb in each of the sentences in (6) to (24) is a complex process that takes place at the conceptual level. To the best of my knowledge, there is currently no objective method to quantitatively measure the degree of manner provided by the verb in a specific construction, leaving the intuition-based approach as the only viable option.

(7) They danced a Sligo jig. (Gallego 2012: 98)

(8) Ariel ate the mango. (Ramchand 2008: 52)

(9) He dug a hole in the ground. (COCA[8])

(10) She wove the tablecloth. (adapted from Folli & Harley 2020: 452)

(11) Marco painted a sky. (Folli & Harley 2020: 438)

(12) Maria carved a doll. (Folli & Harley 2020: 439)

(13) She burned a hole in her coat. (made up)

(14) He scratched a hole in the ground. (COCA)

(15) She punctured a wound in her finger. (made up)

(16) She cut a wound in her foot. (made up)

(17) She bit a hole in the bag. (COCA)

(18) The adventurer walked the trail.
(Mateu 2002: 297, adapted from Tenny 1994: 17)

(19) The adventurer swam the channel.
(Mateu 2002: 297, adapted from Tenny 1994: 17)

(20) Deanne kicked a hole in the wall. (COCA)

(21) She magicked a cursor. (COCA)

(22) She brushed a hole in her coat.
(Mateu & Rigau 2002: 213, adapted from Levin & Rapoport 1988)

(23) John smiled his thanks.
(Mateu 2012: 255, adapted from Levin & Rapoport 1988)

(24) Elna frowned her discomfort. (Acedo-Matellán & Kwapiszewski 2021: 35)

[8]Corpus of Contemporary American English (Davies 2008–).

All the examples in (6) to (24) are taken to lack a Path component in their argument structure. While this is proposed by much work adopting both the lexicalist approach and the neo-constructionist approach (as pointed out in Section 1), such work is mostly concerned with the argument structure of (verb-framed) predicates in which the meaning of the verb can be taken to imply the creation/consumption of the object. Following Mateu (2012); Acedo-Matellán (2016); Folli & Harley (2020), among others, I extend such an analysis to satellite-framed predicates of creation/consumption in which the verb is taken to express a co-event. At first sight, predicates of this type might be argued to involve the argument structure of resultative predicates since most of them typically require a locative PP, which is instead omissible in predicates of creation/consumption that involve a verb-framed strategy. See, in this respect, the contrast between (1a), assumed to be verb-framed, and (5a), repeated in (25a) and (25b), respectively.[9]

(25) a. He dug a hole (in his garden).
b. Brush a hole *(in one's coat).

Based on the contrast in (25), the current assumption that satellite-framed predicates denoting events of creation/consumption do not involve a Path component in their argument structure might be questioned. Specifically, an anonymous reviewer suggests that the PP could be expressing a null Path in English predicates of the type in (5a) in the same way as it seems to do in predicates denoting events of change such as *walk in the room*, considered by the reviewer to be ambiguous between a locative and a change-of-location reading (but see, e.g., Folli & Ramchand 2005: 83 and Gehrke 2008: 90 for a different opinion).

The remainder of this subsection is devoted to showing that satellite-framed predicates of creation/consumption should not be taken to involve a null Path element in their argument structure. I argue that several reasons support this conclusion, even though the contrast in (25), at first sight, might seem to suggest otherwise. First, the claim that the PP in *walk in the room* involves a phonologically null Path is disputable since Path, in such a predicate, has been argued in previous works to be expressed by the verb *walk* (Alexiadou 2015; further see Ramchand 2008: 112, fn. 1; Nikitina 2008; Beavers et al. 2010). This verb, given the right context, may be coerced by some speakers into an interpretation as involving directionality and hence goal of motion. This explains the existence of contrasts like the one depicted in (26). Unlike *walk*, *dance* denotes an activity that typically does not imply directionality. As a result, this verb is less likely to

[9]The judgment in (25b) is by an anonymous reviewer.

express Path, which must therefore be expressed independently in order for the verb to appear in the change-of-location frame.

(26) a. John walked in the room. (in a change-of-location reading)
b. #John danced in the room. (in a change-of-location reading)
(Alexiadou 2015: 1093)

Additionally, if the satellite-framed predicates of creation/consumption discussed in this chapter involved a phonologically null Path, the question would arise as to why Path *must* be null in these predicates. Even by assuming that (26a) is compatible with a change-of-location reading, Path can optionally be overtly realized independently of the verb in resultative predicates of this type, as (27) shows.

(27) John walks in(to) the room. (in a change-of-location reading)

More strikingly, Path is mandatorily realized by a morpheme different from the verb in transitive resultatives featuring direct objects that are not semantically selected by the verb (meaning that they are not a traditional object of the verb based on what lexicalist approaches consider to be the verb's lexical argument structure, and would not be suitable objects of such a verb outside the resultative construction); see the contrast between the example in (28a) and the one in (28b), both examples displaying direct objects that are not semantically selected by their respective verb. In (28b), which involves a bona fide resultative predicate, the presence of an overt Path (*to*) is mandatory. This is not the case in (28a), in contrast to what one would expect if the predicate in (28a) was resultative.[10]

(28) a. Brush a hole in(#to) one's coat.
b. The children run themselves *in/(in)to exhaustion. (Iwata 2020: 281)

A further piece of evidence against considering the locative PP in satellite-framed predicates of creation/consumption as containing a null Path comes from the observation that such a PP can also be headed by the preposition *at*, as shown in (29). Unlike *in*, *at* is only compatible with a non-directional reading and is in complementary distribution with *to*. This strongly suggests that there is no null Path in the locative PPs found in the examples considered in this study.

[10]Arguably, a literal interpretation of the predicate in (28a) could be considered grammatical with the presence of *to*, but pragmatically aberrant, as the predicate would be interpreted as roughly meaning 'move a hole to the inside of one's coat using a brush-like object / in a brush-like manner' (Jaume Mateu, p.c.).

(29) a. They removed the coriaceous bracteoles wrapped outside of the corolla, bit a hole at the base of the corolla where the nectarines are located, and lapped up all the nectar in each flower. (Web)

b. To really make it resemble a tea bag, Murphy punched a hole at the top, then added a length of twine and a "tag". (COCA)

This said, that the locative PP can be omitted in (25a) but not in (25b) is not necessarily due to grammatical reasons. Other factors, e.g., conceptual/pragmatic ones, might be involved. Note that only (25b) involves a direct object which is not semantically selected by the verb. *Brush* is a verb of surface contact, and it typically appears with direct objects denoting the surface that is brushed. It can then be expected that the *v*P in (25b) requires additional contextual information in order to be interpreted under a creation reading. In the absence of the spatial PP *in the coat*, the default inferable reading would be the pragmatically aberrant (not ungrammatical, in my view) one in which *a hole* is a selected object of *brush* (that is to say, it is an existing entity that undergoes an event of *brushing*). Such a reading disappears when the locative PP is added, as the PP introduces the semantic argument of the verb (i.e. the surface which is brushed, e.g., *her coat*), favoring the interpretation of the direct object *a hole* as an effected object thanks to the additional context. Further notice, in this respect, that locative PPs do not always appear in predicates of this type. For instance, no locative PP appears in the complex creation predicates in (21), (23) and (24), nor in the complex consumption predicates in (18) and (19). I suggest that in these predicates, the intended creation/consumption reading arises based on world knowledge/pragmatic considerations regarding the scene denoted by the event which are clear enough without the necessity of additional contextual information.[11]

2.2 Method and results

The examples in (6) to (24) were presented to the speakers in a randomized order. Translations, glosses, and grammaticality judgments were collected by consulting one linguist native speaker per language.[12] For each of the examples tested,

[11] This is in contrast to resultative predicates like (28b), where the licensing of a direct object that is not semantically selected by the verb always requires the presence of a phrase (e.g., a result PP) acting as a secondary predicate. Such a contrast can be taken to reflect the different status of the PPs appearing in complex creation/consumption predicates and the result PPs appearing in resultative predicates with non-selected objects, the former being adjuncts while the latter are arguments of the predicate.

[12] One exception is the native speaker of Ukrainian, who is not a linguist but who is a proficient speaker of English.

it was ensured that the intended (creation/consumption) meaning of the predicate was clear to the speakers before soliciting a grammaticality judgment. Two caveats were further considered in gathering judgments from the native speakers of the Slavic languages selected. First, considering that, as I will discuss in Section 4, perfective aspect in many Slavic languages is achieved through prefixes which have been argued to play a role in the event domain and interfere with the data being analyzed, the English examples were presented in the imperfective aspect when soliciting corresponding translations from the native speakers of the Slavic languages tested. For instance, the availability of the English example in (6) was checked in Slavic languages using the imperfective construction *John was singing a song*. Additionally, the speakers were asked to provide translations involving unprefixed verbs only. As a second caveat, when possible, the availability of a transitive non-creation use of those verbs which gave rise to ungrammatical translations in the languages tested was checked for each language, in order to exclude possible cases of ungrammaticality due to unrelated lexical restrictions on the transitivity of the verbs involved.[13]

The results obtained are graphically summarized in Table 1, Table 2, and Table 3 for satellite-framed languages, verb-framed languages, and Slavic languages, respectively.[14] The data collected are provided in the Appendix.

Overall, the native speakers of the satellite-framed languages tested accepted a literal translation for the vast majority of the complex creation/consumption predicates provided from English (Table 1), consistently with Talmy's typology.[15]

[13]Such a non-creation use pertains to transitive predicates where the direct object is understood as a pre-existing entity which undergoes the action named by the verb, and is not created or consumed during the event. Compare, for instance, (12) with *Maria carved the wood* (Folli & Harley 2020: 439), where the direct object pre-exists the carving event and undergoes the change of state specified by the verb.

[14]In the tables, empty slots correspond to cases where a direct translation of the English verb is not available in the target language. For reasons of space, the languages examined are identified in the tables using the ISO 639-2/B standardized nomenclature (US Library of Congress).

[15]I assume that Mandarin Chinese is a standard satellite-framed language of the English type. Acedo-Matellán (2016) argues that some varieties of Chinese are weak satellite-framed because the satellite-framed constructions they display present the Path and the co-event components as univerbated in a sort of V-V compound (see also Fan 2014). However, the idea that the Path and the co-event components in Chinese resultatives form a complex head is disputed. For instance, Wang (2010) presents evidence of phrasal elements that may intervene between the two members of the V-V compound in Chinese resultatives. We can see this in (i), where the complex negation *bu tai* 'not too' disrupts the adjacency between *da* 'hit' and *si* 'die'.

(i) Wo da bu tai si na zhi zhanglang.
I hit NEG too die that CL cockroach
'I can hardly hit the cockroach to death.' (Chinese; Wang 2010: 38)

Table 1: Creation/consumption predicates in satellite-framed languages

Example	Dut	Ger	Chi	Hun
(6) John sang a song	✓	✓	✓	✓
(7) They danced a Sligo jig	✓	✓	✓	✓
(8) Ariel ate the mango	✓	✓	✓	✓
(9) He dug a hole in the ground	✓	✓	✓	✓
(10) She wove the tablecloth	✓	✓	✓	✓
(11) Marco painted a sky	✓	✓	✓	✓
(12) Maria carved a doll	✓	✓	✓	✓
(13) She burned a hole in her coat	✓	✓	✓	✓
(14) He scratched a hole in the ground	✓	✓	✓	✓
(15) She punctured a wound in her finger	✓	✓	✓	★
(16) She cut a wound in her foot	✓	✓	✓	✓
(17) She bit a hole in the bag	✓	✓	✓	✓
(18) The adventurer walked the trail	✓	✓	✓	??
(19) The adventurer swam the channel	★	★	★	★
(20) Deanne kicked a hole in the wall	✓	✓	✓	✓
(21) She magicked a cursor	??		✓	✓
(22) She brushed a hole in her coat	✓	✓	✓	✓
(23) John smiled his thanks	★	★	★	★
(24) Elna frowned her discomfort	★			★

Table 2: Creation/consumption predicates in verb-framed languages

Example	Ita	Cat	Spa	Baq	Gre
(6) John sang a song	✓	✓	✓	✓	✓
(7) They danced a Sligo jig	✓	✓	✓	✓	✓
(8) Ariel ate the mango	✓	✓	✓	✓	✓
(9) He dug a hole in the ground	✓	✓	✓	✓	✓
(10) She wove the tablecloth	✓	✓	✓	✓	✓
(11) Marco painted a sky	✓	✓	✓	✓	✓
(12) Maria carved a doll	✓	✓	✓	✓	✓
(13) She burned a hole in her coat	★	★	★	✓	★
(14) He scratched a hole in the ground	★	★	★	✓	✓
(15) She punctured a wound in her finger	??	★	★	??	★
(16) She cut a wound in her foot	★	★	★	??	★
(17) She bit a hole in the bag	★	★	★	?	★
(18) The adventurer walked the trail	★	★	?	✓	✓
(19) The adventurer swam the channel	★	★	?		✓
(20) Deanne kicked a hole in the wall	★		★	★	★
(21) She magicked a cursor					★
(22) She brushed a hole in her coat	★	★	★	★	★
(23) John smiled his thanks	★ ?	★	?		
(24) Elna frowned her discomfort	★	★	★		★

Table 3: Creation/consumption predicates in Slavic languages (imperfective, unprefixed predicates)

Example	Rus	Ukr	Pol	Slo	Ser	Hrv
(6) John sang a song	✓	✓	✓	✓	✓	✓
(7) They danced a Sligo jig	✓	✓	✓	✓	✓	✓
(8) Ariel ate the mango	✓	✓	✓	✓	✓	✓
(9) He dug a hole in the ground	✓	✓	✓	✓	✓	✓
(10) She wove the tablecloth	✓	✓	✓	✓	✓	✓
(11) Marco painted a sky	✓	✓	✓	✓	✓	✓
(12) Maria carved a doll	★	★	✓	?	✓	✓
(13) She burned a hole in her coat	★	✓	?	??	★	✓
(14) He scratched a hole in the ground	✓	✓	★	✓	??	★
(15) She punctured a wound in her finger	★	✓	★	★	??	★
(16) She cut a wound in her foot	★	★	★	★	★	★
(17) She bit a hole in the bag	★	★	★	★	?	★
(18) The adventurer walked the trail	★	★	★	★	??	★
(19) The adventurer swam the channel	★	★	★	★	??	★
(20) Deanne kicked a hole in the wall	★	★	★	★	★	★
(21) She magicked a cursor	★	★	★	★	★	✓
(22) She brushed a hole in her coat	★	★	★	✓	★	★
(23) John smiled his thanks						
(24) Elna frowned her discomfort						

The results obtained from the native speakers of the verb-framed languages tested are considerably different when it comes to predicates that are understood as involving the expression of a co-event by the verb (Table 2). A literal translation of the English examples gets progressively more difficult to obtain in the verb-framed languages as the predicates shift from a verb-framed strategy (the verb implying the creation/consumption of the object) to a satellite-framed strategy (the verb being understood as specifying a co-event of the main event of creation/consumption), in accordance with the typology.

As Table 3 makes clear, Slavic languages behave on a par with verb-framed languages in disallowing creation/consumption predicates where the meaning of the verb cannot be taken to imply the creation/consumption of the entity denoted by the object. The literal translations in (30) of the satellite-framed example in (22) (also in (5a)) in Russian, Ukrainian, and Polish illustrate this.

(30) a. * Ona čes-a-l-a dyrku v pal'to. (Russian)
she.NOM brush.IPFV-TH-PST-AGR hole.ACC in coat.LOC

b. * Vona ter-l-a dyrku na kurtci. (Ukrainian)
she.NOM brush.IPFV-PST-AGR hole.ACC in coat.LOC

c. * Ona czes-a-ł-a dziurę w płaszczu. (Polish)
she.NOM brush.IPFV-TH-PST-AGR hole.ACC in coat.LOC

Intended: 'She was brushing a hole in her coat.'

In such cases, a verb-framed construction displaying a verb whose meaning implies the creation/consumption of the direct object has to be used instead, the manner co-event being optionally expressed as an adjunct.[16]

[16]The results obtained further warn against making generalizations about the typological behavior of a language based on individual examples. For instance, the example in (12) seems to be generally available in the verb-framed languages examined, but it does not fare well in Slavic languages such as Russian, Ukrainian, and Slovak. Instead, the example in (14) presents a high degree of variation both in verb-framed languages and in weak satellite-framed Slavic languages, as it is accepted in half of the Slavic languages and in two of the five verb-framed languages examined. Additionally, none of the native speakers of the satellite-framed languages checked seems to accept the example in (19), even though they accept the similar example in (18) and even though (19) is accepted by the native speaker of verb-framed Greek. It is also worth noticing that the examples in (23) and (24), despite being well-formed in English, do not fare well in any of the other satellite-framed languages tested according to the native speakers consulted. Arguably, some level of idiomaticity is present in these two constructions of English, which is not shared by the speakers of the other satellite-framed languages tested. Further similar irregularities are detected, which nonetheless do not affect the emergence of clear trends consistent with the predictions following from Talmy's typology.

(31) a. Ona del-a-l-a dyrku v pal'to ščëtkoj. (Rus)
she.NOM make.IPFV-TH-PST-AGR hole.ACC in coat.LOC brush.INS

b. Vona rob-y-l-a dyrku na kurtci ščitkoju. (Ukr)
she.NOM make.IPFV-TH-PST-AGR hole.ACC in coat.LOC brush.INS

c. Ona rob-i-ł-a dziurę w płaszczu szczotką. (Pol)
she.NOM make.IPFV-TH-PST-AGR hole.ACC in coat.LOC brush.INS

'She was making a hole in her coat with a brush.'

In the next section I propose a formal account of the patterns observed in terms of a PF requirement holding of the functional head *v* involved in verbal predicates. The requirement is argued to affect both verb-framed and weak satellite-framed languages, explaining the uniformity of results observed in these languages.

3 A morphophonological account of Talmy's typology

3.1 A syntactic approach to argument structure

I adopt a neo-constructionist view of argument structure along the lines of Mateu & Acedo-Matellán (2012), according to which argument structure is conceived of as consisting of the relations established between a head and its arguments (i.e. its specifier and complement) in syntax. A fundamental distinction is drawn between functional heads, which are abstract relational elements that are necessary for the building of syntactic structures, and roots, regarded as units of conceptual content that provide real world details to syntactic predicates and are devoid of grammatically relevant information (Mateu 2002; Borer 2005; Acedo-Matellán 2010; 2016, among others).

In this approach, satellite-framed constructions are understood as involving the conflation, i.e. e(xternal)-merge (Haugen 2009), of a root with a phonologically null verbal head *v*, whose complement receives a morphological realization independently of the verb. The root conflated with *v* is understood as specifying a co-event of the main event arising from the predicate (Embick 2004; Harley 2005; Mateu & Acedo-Matellán 2012; Ausensi & Bigolin 2023, among others). In the case of resultative (change-of-state/location) predicates, such as (32) (whose syntactic structure is illustrated in Figure 1), *v* takes a small clause as complement (PredP in Figure 1), where the undergoer of the transition and the final state/location are introduced (Hoekstra 1988).[17]

[17]In the structures, I represent roots with small capitals, following Acedo-Matellán (2016).

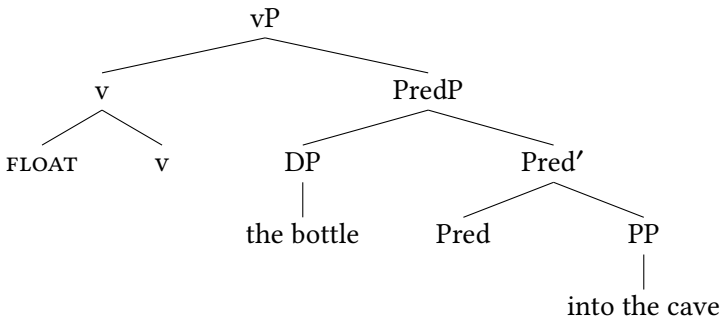

Figure 1: Syntactic structure of (32)

(32) The bottle floated into the cave. (Talmy 2000: 227)

Verb-framed languages are different from satellite-framed languages in that they never show the conflation pattern depicted in Figure 1 (Mateu 2012). In verb-framed languages, the predicative complement of the small clause always forms a unit with the *v* head, whereby the only resultative predicates attested are those formed via incorporation (Mateu 2002; 2017; Mateu & Rigau 2002; Folli & Harley 2020, among others).[18] The syntactic argument structure in Figure 2, relative to the Spanish verb-framed change-of-location predicate in (33), illustrates this.

(33) La botella entró (flotando) a la cueva.
'The bottle entered the cave (floating).' (Talmy 2000: 227)

As for creation/consumption predicates, these are argued to involve an unergative configuration (à la Hale & Keyser 1993) consisting of a *v* head that takes as its complement either a root, which subsequently incorporates into it (the overt object emerging as a hyponym of the verb; Hale & Keyser 1997; 2002), or an independent DP. In the latter case, *v* may either appear as an overt light verb (e.g., *make*, as in the Spanish example in (5b)) or conflate with another root, giving rise to the complex creation/consumption predicates that are peculiar to the satellite-framed languages (Mateu 2012). The root incorporation pattern, corresponding to predicates of the type in (1) (see, e.g., (1a), repeated in (34)), is represented in

[18]Following Hale & Keyser (2002) and Mateu & Rigau (2002, 2010), I consider overt PPs expressing the final location of change-of-location events in verb-framed predicates (e.g., *a la cueva* in (33)) as hyponymous arguments that further specify the result provided by the root that incorporates into *v*. In the syntactic structures, hyponymous arguments are omitted for ease of exposition. For discussion of possible syntactic representations of hyponymous arguments, see Hale & Keyser (1997, 2002); Mateu (2008); Haugen (2009); Gallego (2012); Real-Puigdollers (2013), among others.

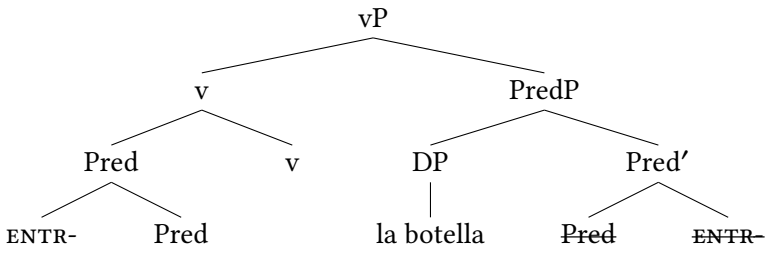

Figure 2: Syntactic structure of (33)

Figure 3. The pattern involving conflation is shown in Figure 4, which represents the syntactic structure of (5a) (repeated in (35)).[19]

(34) He dug a hole in his garden. (Washio 1997: 46)

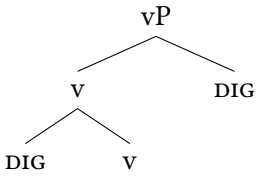

Figure 3: Syntactic structure of (34)

(35) She brushed a hole in her coat.
(Mateu & Rigau 2002: 213, based on Levin & Rapoport 1988)

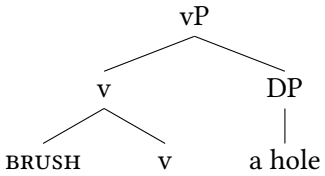

Figure 4: Syntactic structure of (35)

[19]The spatial PPs in (34) and (35) are treated as *v*P-external adjuncts (see also footnote 11) and are omitted from the syntactic representations for ease of exposition. For the same reason I omit the representation of the external argument, which, following considerations in Marantz (1984); Kratzer (1996); Pylkkänen (2008), among others, I assume to be introduced by a functional head Voice merged on top of the *v*P.

At first sight, the presence vs. absence of the operation conflating a root with *v* in the syntax of a given language might seem to successfully account for the language's behavior with respect to Talmy's typology. However, there are at least two reasons, one theoretical and one empirical, why the availability of this syntactic operation in a given language cannot be taken as such as an effective way of explaining the typology. On the theoretical side, as noted in Folli & Harley (2020), parameterizing the availability of a specific syntactic operation comes at the cost of giving up on the basic minimalist assumption that variation is not located in narrow syntax. On the empirical side, the results presented in Section 2 show that correlating Talmy's typology with the presence vs. absence of the syntactic operation conflating a root with *v* leads to a wrong prediction when it comes to the possibility of licensing complex creation/consumption predicates in weak satellite-framed languages like Slavic languages (see Table 3).

In what follows, I propose an account of Talmy's typology which locates the source of the cross-linguistic variation at the PF level, understanding it in terms of differing morphophonological realization conditions of individual functional and lexical items. Not only does such an account seem to make the correct predictions with respect to the relevant patterns of cross-linguistic variation, it also provides a solution to the conundrum whereby verb-framed languages appear to consistently lack a structure-building operation (*viz.* the conflation of a root with *v*) that is instead available in satellite-framed languages.

3.2 A PF requirement on the *v* head in verb-framed languages

I endorse a view of cross-linguistic variation as primarily consisting in differing morphophonological realization conditions of functional heads (Acedo-Matellán 2016; Mateu 2017, among others). In order to account for the variation observed in relation to Talmy's typology, I posit that the *v* head in verb-framed languages is associated with a PF requirement which imposes the incorporation of *v*'s complement into *v* when *v* is phonologically null.[20]

(36) *Verb-framed languages' PF requirement*:
A phonologically null *v* must incorporate its complement.

[20]The requirement in (36) may ultimately be understood as an instance of Arregi & Pietraszko's (2021) "Generalized Head Movement" (GenHM) operation. This operation is captured by Arregi & Pietraszko (2021) by means of a feature [hm] on syntactic heads which, when present, requires them to form a single morphological word with the closest head of their complement. Although Arregi & Pietraszko (2021) formalize GenHM as a syntactic operation, they leave open the possibility that such an operation is carried out in the PF branch of the derivation (see Kwapiszewski 2022 for a PF implementation of GenHM). I am grateful to Víctor Acedo-Matellán for drawing my attention to the work of Arregi & Pietraszko (2021).

The requirement in (36) predicts that the typological patterns noted by Talmy hold regardless of whether a result component is involved (as in the case of change-of-location/state predicates) or not (as in creation/consumption predicates). This is so because the *v* head is found in both resultative predicates and creation/consumption predicates, as discussed in Section 3.1.[21] In Figure 5 and Figure 6, illustrating the syntactic structures of the verb-framed resultative predicate in (33) and the verb-framed creation predicate in (34), respectively, I represent the PF requirement on the *v* head by means of an index *[i]* which is deleted when the requirement is satisfied.

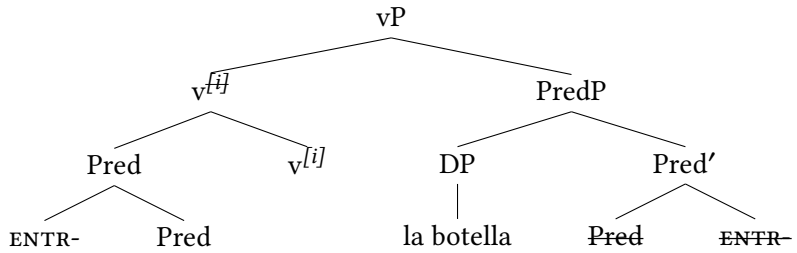

Figure 5: Syntactic structure of (33) (with a visual representation of the PF requirement (*[i]*) on *v*)

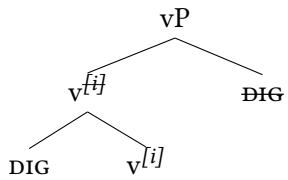

Figure 6: Syntactic structure of (34) (with a visual representation of the PF requirement (*[i]*) on *v*)

In the present account, the absence of the operation conflating a root with *v* in verb-framed languages arises as a by-product of *v*'s PF requirement. No parameterization of specific syntactic operations thus needs to be invoked. Verb-framed languages give the impression of lacking the operation conflating a root with *v*, because the syntactic configuration produced by such an operation is incompatible with the morphophonological context needed for the incorporation of *v*'s

[21] A reviewer wonders whether the PF requirement of verb-framed languages can be argued to apply to phonologically null functional heads in general in these languages. In the remainder of this presentation I continue to focus on the functional head involved in the argument structure of verbal predicates, leaving the exploration of this hypothesis to further research.

complement into *v* at PF in these languages. The syntactic representations in Figure 7 and Figure 8, corresponding to the Spanish ungrammatical satellite-framed resultative predicate in (37) and satellite-framed creation/consumption predicate in (38), respectively, illustrate this.[22] In the case of (37), ungrammaticality arises because neither the AP *limpia* 'clean' nor its root LIMP- can function as prefixes of verbs in Spanish, whereby the fulfillment of *v*'s PF requirement would give rise to an unpronounceable sequence of morphemes.[23] Similarly, the ungrammaticality of (38) is due to the DP complement of *v* (*su agradecimiento* 'his thanks') not being able to incorporate onto *v*, which leaves the PF requirement on *v* unsatisfied.[24]

(37) * Él fregó la mesa limpia.
he wipe.PST.AGR the table clean
'He wiped the table clean.' (Bigolin & Ausensi 2021: 519)

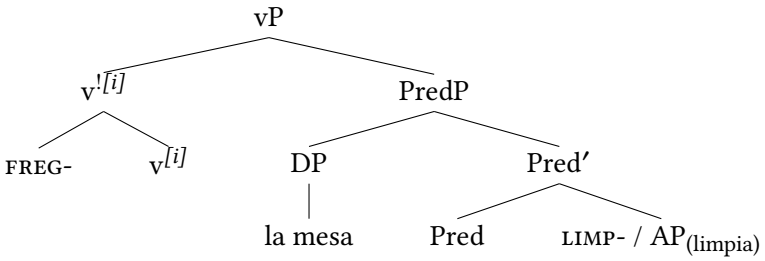

Figure 7: Syntactic structure of (37) (with a visual representation of the PF requirement (*[i]*) on *v*)

(38) * Juan sonríe su agradecimiento.
Juan smile.PRS.AGR POSS gratitude
'Juan smiles his thanks.' (Bigolin & Ausensi 2021: 527)

I propose that the requirement in (36), found in verb-framed languages, is also responsible for the pattern illustrated in (4) concerning Slavic languages (and

[22] (37) is grammatical in Spanish in the irrelevant readings involving a depictive or attributive interpretation of the AP (Jaume Mateu, p.c.).

[23] In Distributed Morphology terms, one could formalize the context of insertion of the Vocabulary Item associated with LIMP- as requiring that no roots intervene between LIMP- and *v*.

[24] See Martínez Vázquez (2014) for the claim that, to a certain extent, complex creation/consumption predicates can be found in verb-framed Spanish. Further see Bigolin & Ausensi (2021) for an analysis of the examples in Martínez Vázquez (2014) as involving a verb-framed strategy.

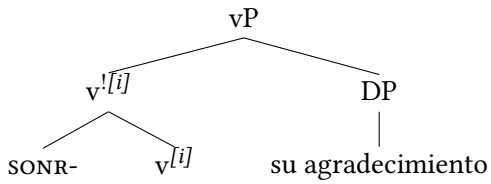

Figure 8: Syntactic structure of (38) (with a visual representation of the PF requirement (*[i]*) on *v*)

weak satellite-framed languages in general), in which the result component of resultative predicates with manner-denoting verbs must form a prosodic word with the verb (Talmy 2000; Acedo-Matellán 2010; 2016). That is to say, I propose that weak satellite-framed languages are fundamentally verb-framed languages. The reasoning goes as follows. As the account of (37) and (38) shows, in addition to PF requirements on functional heads of the type in (36), a relevant factor in determining the availability of specific constructions in a given language is whether or not the constructions in question can be spelled out consistent with the PF restrictions on the individual items that make up the lexical inventory of the language concerned. For instance, I have argued that in Spanish (and, more generally, in verb-framed languages), there are no instances of constructions involving the conflation of a root with *v* because such a syntactic configuration prevents the fulfillment of *v*'s requirement that it incorporate its complement, as the lexical inventory of Spanish does not contain morphemes capable of expressing a Talmian Path in the form of a verbal prefix. I argue that weak satellite-framed languages differ from standard verb-framed languages in the domain of resultative predicates in that their lexicon has result-denoting morphemes which can be realized as verbal prefixes (e.g., *iz-* 'out' in (4)). The prefixal nature of such morphemes may satisfy *v*'s requirement that it incorporates its complement, by concomitantly leaving open the possibility of conflating an independent root with *v*.[25] This gives rise to a satellite-framed behavior in the domain of resultative

[25]The pattern is discussed by Mateu (2017), who, however, continues to consider Slavic languages (and weak satellite-framed languages in general) as fundamentally satellite-framed languages. The parallelism between prefixed resultative predicates with manner-denoting verbs of Slavic languages and English satellite-framed resultative constructions is proposed in Spencer & Zaretskaya (1998) and Mateu (2008). See Snyder (2012) for the claim that Russian patterns with verb-framed languages with respect to The Compounding Parameter of Snyder (1995; 2001). Russian and Czech have been argued to be verb-framed languages also by Gehrke (2008), who relates their verb-framedness to their realizing accomplishment structures in the verb (also by means of prefixes). I come back to Gehrke's (2008) proposal in Section 4.2, where I elaborate on its potential relevance for the data dealt with in the present chapter.

predicates, as noted in Talmy (2000) and further discussed in Acedo-Matellán (2016). The structure in Figure (9), corresponding to the Russian predicate in (4) (repeated here as (39)), illustrates this.

(39) Ona iz-pis-a-l-a svoju ručku.
she.NOM out-write-TH-PST-AGR POSS pen.ACC
'Her pen has run out of ink.' (Lit. 'She has written her pen out (of ink).')
(Russian; Spencer & Zaretskaya 1998: 17)

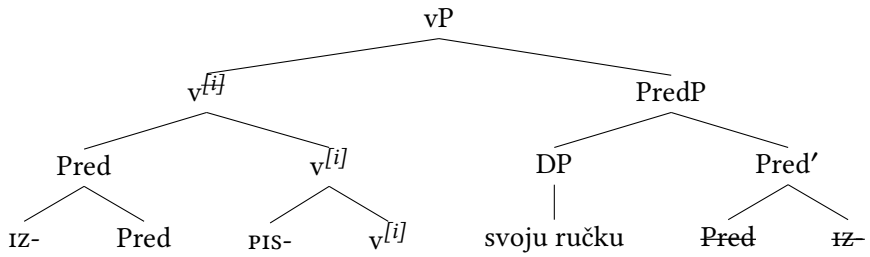

Figure 9: Syntactic structure of (39) (with a visual representation of the PF requirement (*[i]*) on *v*)

From the hypothesis that weak satellite-framed languages are actually verb-framed languages (in the sense of (36)), it also follows that such languages should display a clear verb-framed behavior in the domain of creation/consumption predicates. No prefixal morpheme capable of referring to the object of creation/consumption predicates is present in the lexicon of these languages, whereby only creation/consumption predicates that involve the incorporation of a root into *v* can be licensed, in addition to predicates involving overt light verbs such as *do* or *make* (e.g., (31)). See this in Figure 10, where the syntactic representation of the ungrammatical Russian predicate in (30a) (repeated in (40)) is provided.

(40) * Ona čes-a-l-a dyrku v pal'to. (Russian)
she.NOM brush.IPFV-TH-PST-AGR hole.ACC in coat.LOC
'She was brushing a hole in her coat.'

The present account provides a solution to the minimalist conundrum whereby verb-framed languages seem to lack a structure-building operation (that of conflating a root with the *v* head) which is instead available in satellite-framed languages (see discussion in Folli & Harley 2020). In present terms, the resultative predicates with manner-denoting verbs and a prefixal result found in weak satellite-framed languages like Slavic languages are precisely to be regarded as constructions where a root is conflated with *v* in a verb-framed system.

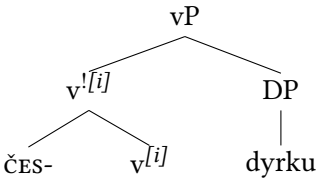

Figure 10: Syntactic structure of (40) (with a visual representation of the PF requirement (*[i]*) on *v*)

3.3 A comparison with some predecessors

Previous neo-constructionist approaches to Talmy's typology emphasize either that verb-framed languages always express the Path component in the main verb (Acedo-Matellán & Mateu 2013; Acedo-Matellán 2016; Folli & Harley 2020, among others) or that verb-framed languages lack predicates where, more generally, the verb expresses a manner co-event (Mateu 2012). The former approach runs into problems when considering that verb-framed languages and weak satellite-framed languages do not display complex creation/consumption predicates of the type displayed by satellite-framed languages, as nothing in this approach precludes the realization of such predicates – where no result component is involved – in these languages. Put differently, complex creation/consumption predicates are predicted to be universally available by this approach, contrary to facts.[26] The latter approach correctly predicts the unavailability of complex creation/consumption predicates in verb-framed languages, but it also predicts that weak satellite-framed languages should behave on a par with standard satellite-framed languages in allowing complex creation/consumption predicates. Furthermore, as discussed in Section 3.1, the generalization provided by this ap-

[26] Aware of this prediction, Folli & Harley (2020) argue that complex creation/consumption predicates indeed do not give rise to cross-linguistic variation related to Talmy's typology and are generally available in verb-framed languages. This fact would then constitute the empirical proof that the expression of a co-event in the main verb is a universally available linguistic process. Specifically, Folli & Harley (2020) note that creation/consumption predicates such as (10), (11), and (12) are licensed both in satellite-framed English and in verb-framed Italian, and they assume that these predicates involve the expression of a manner co-event in the verb, similar to what is observed in satellite-framed resultative predicates. However, as shown in Table 2, that these specific examples do not give rise to significant cross-linguistic variation cannot be taken to conclude that no typological variation exists in the domain of creation/consumption predicates. Namely, the examples in Folli & Harley (2020) can be taken to involve verbs whose conceptual meaning implies the creation of the direct object, which in turn is interpreted as a hyponym of the verb (in the sense of Hale & Keyser 1997; 2002). As such, they can be argued to involve the verb-framed incorporation pattern exemplified in Figure 3, whereby they are allowed in verb-framed Italian.

proach can only be taken as a descriptive one, as it cannot itself be considered explanatory without entailing a conception of syntax as a locus of parametric variation.

4 The role of perfectivizers

4.1 Internal prefixes and events of creation/consumption

In Slavic languages, the contrast between the imperfective and the perfective aspectual viewpoints is typically achieved by means of verbal prefixation and suffixation. In a standard case, basic verbal stems have an imperfective reading, which is turned perfective via the addition of a prefix. The Russian examples in (41) illustrate this.

(41) a. My pis-a-l-i pis'mo.
we.NOM write.IPFV-TH-PST-AGR letter.ACC
'We were writing a letter.' (Russian; Smith 1991: 302)

b. On na-pis-a-l pis'mo.
he.NOM PFV-write-TH-PST letter.ACC
'He wrote a letter.' (Russian; Smith 1991: 301)

Normally, the perfective prefix comes from the same inventory of morphemes which can provide the Talmian Path component in resultative predicates. Indeed, it has been argued that prefixes of this type – hereafter referred to as "internal" prefixes – denote the incorporation of a non-referential result into the verb, in a resultative structure (Ramchand & Svenonius 2002; Gehrke 2008; Acedo-Matellán 2016; Kwapiszewski 2022, among others).[27]

In the present framework, Slavic predicates perfectivized via internal prefixes (such as the Russian one in (41b)) are thus attributed the syntactic structure in Figure 11. I assume that predicates depicting events of creation/consumption made

[27] Internal (or "lexical") prefixes are contrasted with external (or "superlexical") ones. The distinction is motivated by a series of factors which point toward the idea that internal prefixes are merged inside the vP (hence the name), while external prefixes are merged higher in the functional spine of the clause. For discussion of the distinction between internal and external verbal prefixes in Slavic languages, see Babko-Malaya (1999); Romanova (2004); Svenonius (2004); Borik (2006); Arsenijević (2006, 2007); Gehrke (2008); Žaucer (2009); Łazorczyk (2010); Tatevosov (2011); Milosavljević (2022); Kwapiszewski (2022), among many others. The classification of Slavic prefixes has also been argued to be more nuanced than the traditional bi-partite division found in the literature. For instance, Tatevosov (2008) argued that in Russian there exists a class of prefixes (e.g., *do-* and *pere-*) that exhibit an intermediate behavior between internal and external prefixes. Since the examples from Russian collected in this study do not involve such prefixes, I do not pursue this issue further here.

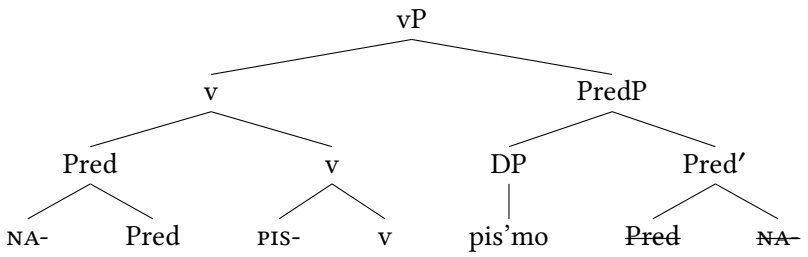

Figure 11: Syntactic structure of (41b)

perfective via internal prefixes consistently involve the argument structure that is found in resultative (change of state/location) predicates, the direct object being interpreted as a created or consumed entity due to pragmatic factors arising from the conceptual interpretation of the construction. Insofar as these predicates involve the incorporation of *v*'s complement into *v*, as shown in Figure 11, they are predicted to be possible in Slavic languages in the same way as resultative predicates with manner-denoting verbs are, the incorporation of the prefix fulfilling the verb-framed requirement of the language as understood in (36). In what follows, I present the results of a study exploring the validity of such a prediction.

In order to verify the prediction, I have conducted the same test run for bona fide creation/consumption predicates which was described in Section 2. This time, however, the English examples have been left in their non-progressive form, to check whether the presence of the perfective prefixes in their Slavic counterparts affects the grammaticality of their literal translation in the Slavic languages. The results obtained, summarized in Table 4, show that Slavic languages clearly behave on a par with satellite-framed languages (cf. Table 1) when a perfective prefix is present, confirming the prediction.[28] The grammatical renditions of the English example in (22) in Russian, Ukrainian, and Polish illustrate this (see (42)). The structure for the Russian example in (42a), which is understood to hold also for the rest of the data, is provided in Figure 12.

(42) a. Ona pro-čes-a-l-a dyrku v pal'to. (Russian)
she.NOM PFV-brush-TH-PST-AGR hole.ACC in coat.LOC

b. Vona pro-ter-l-a dyrku na kurtci. (Ukrainian)
she.NOM PFV-brush-PST-AGR hole.ACC in coat.LOC

[28]The native speakers of Serbian and Croatian seem more conservative than the native speakers of the other Slavic languages tested in disallowing a creation/consumption reading for several of the predicates involved. At the moment, I am agnostic as to why the pattern displayed by Serbian and Croatian in this test differs in this way from that of the other Slavic languages.

c. Ona wy-czes-a-ł-a dziurę w płaszczu. (Polish)
she.NOM PFV-brush-TH-PST-AGR hole.ACC in coat.LOC
'She brushed a hole in her coat.'

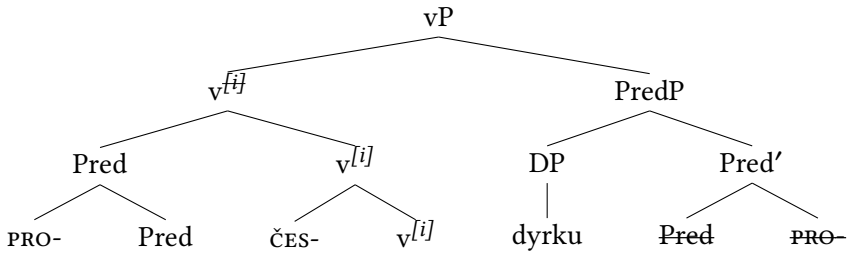

Figure 12: Syntactic structure of (42a) (with a visual representation of the PF requirement (*[i]*) on *v*)

The contrast in acceptability between predicates with unprefixed verbs and predicates with prefixed verbs in the expression of complex events of creation/

Table 4: Perfective predicates with creation/consumption reading in Slavic languages (prefixed predicates)

Example	Rus	Ukr	Pol	Slo	Ser	Hrv
(6) John sang a song	✓	✓	✓	✓	✓	✓
(7) They danced a Sligo jig	✓	✓	✓	✓	✓	✓
(8) Ariel ate the mango	✓	✓	✓	✓	✓	✓
(9) He dug a hole in the ground	✓	✓	✓	✓	✓	✓
(10) She wove the tablecloth	✓	✓	✓	✓	✓	✓
(11) Marco painted a sky	✓	✓	✓	✓	✓	✓
(12) Maria carved a doll	✓	✓	✓	✓	✓	✓
(13) She burned a hole in her coat	✓	✓	✓	✓	??	✓
(14) He scratched a hole in the ground	✓	✓	✓	✓	??	★
(15) She punctured a wound in her finger	✓	✓	✓	✓	??	★
(16) She cut a wound in her foot	✓	?	✓	✓	★	★
(17) She bit a hole in the bag	✓	✓	✓	✓	✓	★
(18) The adventurer walked the trail	✓	✓	✓	✓	✓	✓
(19) The adventurer swam the channel	✓	✓	✓	✓	✓	✓
(20) Deanne kicked a hole in the wall	✓	✓	✓	✓	??	★
(21) She magicked a cursor	✓	✓	✓	✓	??	✓
(22) She brushed a hole in her coat	✓	✓	✓	✓	?	★
(23) John smiled his thanks						
(24) Elna frowned her discomfort						

consumption in Slavic languages (compare Table 3 with Table 4) cannot be argued to depend on the aspectual shift from the imperfective reading of the former type of predicates to the perfective reading of the latter type of predicates. This is proved by the availability, for the examples that are ungrammatical in the imperfective reading provided by unprefixed verbs, of imperfective predicates obtained via secondary imperfectivization. Secondary imperfectivization is a strategy found in Slavic languages whereby a prefixed, perfective verb is turned into an imperfective reading by means, typically (although not necessarily), of a further process of affixation (Babko-Malaya 1999; Romanova 2004; Svenonius 2004; Kwapiszewski 2022, among others). In the examples under consideration, secondary imperfectivization gives rise to grammatical predicates also in those cases where an imperfective reading involving unprefixed verbs gives rise to ungrammaticality. This is illustrated in (43) with the Ukrainian translations of (20), which is unavailable in the imperfective unprefixed version (43a) but is grammatical both in the perfective prefixed version (43b) and in the imperfective prefixed version obtained via secondary imperfectivization (43c).

(43) a. * Din byv dyru u stini. (Ukrainian)
Din kick.IPFV.PST hole.ACC in wall.LOC
Intended: 'Din was kicking a hole in the wall.'

b. Din pro-byv dyru u stini.
Din PFV-kick.PST hole.ACC in wall.LOC
'Din kicked a hole in the wall.'

c. Din pro-byv-av dyru u stini.
Din PRO-kick.PST-IPFV hole.ACC in wall.LOC
'Din was kicking a hole in the wall.'

These facts suggest that the predicate's grammaticality does not rely on the perfective reading, but on the presence of the prefix, which fulfills the verb-framed requirement of the language by incorporating into *v* from its complement.

4.2 Incrementality in complex predicates

The meaning contribution of internal prefixes in the licensing of complex predicates in Slavic languages warrants further investigation. For instance, Gehrke (2008) posits that complex predicates, in which the main verb denotes an activity, require an accomplishment event structure, which in satellite-framed resultative constructions is licensed by an incremental structure provided by a secondary predicate. She further argues that internal prefixes of Slavic languages derive accomplishment structures, and that in these languages (specifically, she refers to

Czech and Russian) accomplishment structures are realized in the verb complex, either by the verb itself or by an internal prefix. Gehrke's findings may offer an alternative explanation for why complex predicates of creation/consumption are grammatical in Slavic languages only when prefixed. Unprefixed complex predicates of creation/consumption might be infelicitous in Slavic languages due to the absence of an accomplishment structure within the verbal complex. This explanation rests on the assumption that complex predicates, cross-linguistically, require the presence of an accomplishment event structure. However, the idea that an accomplishment event structure is needed to license satellite-framed constructions is not undisputed. For instance, Folli & Harley (2006) discuss cases of satellite-framed predicates of English, in which a PP denoting an unbounded path appears as the secondary predicate, as in (44). Since the incremental structure associated with PPs of this kind does not have a culmination point, the overall predicate lacks an accomplishment event structure.[29]

(44) a. John waltzed Matilda around and around the room for hours.

b. John walked Mary along the river all afternoon.
(Folli & Harley 2006: 125)

c. John walked Mary towards her car for 3 hours.
(Folli & Harley 2006: 137)

Another explanation worth considering is that unprefixed complex creation/consumption predicates are not licensed in Slavic languages due to the absence of incrementality in these constructions. I argue that this explanation is not satisfactory either. In these languages, given the right context, predicates of creation/consumption can be telic even if unprefixed (see, e.g., Gehrke 2008: 179, fn. 41; Mehlig 2012), the incremental path structure being provided by the direct object (Rappaport Hovav 2008, 2014). For instance, Mehlig (2012) argues that such a reading of the direct object in predicates denoting events of creation/consumption is possible in Russian if the extent of the entities denoted by the object has been determined in advance (e.g., from the conversational context) and these entities are referred to in the relevant imperfective predicate by means of a demonstrative (e.g., *ėtot*/*tot* 'this/that'). This is illustrated by Mehlig (2012) with

[29]The temporal adverbials in the examples in (44) show that the PPs in these examples are not understood as referring to a bounded Path. I am not aware of studies concerned with the availability of such examples in Slavic languages. The unavailability of these examples in Polish (Wojciech Lewandowski, p.c.) and in Italian, however, points toward the idea that the satellite-framed/verb-framed division should not be (only) intended as a constraint in the expression of accomplishment structures in some languages and not in others.

examples like (45), where the consumption predicate *on est ėti dva banana* 'he is eating those two bananas' is successfully modified by the expression *Odin on uže s"el* 'He has already eaten one of them', which presupposes that the object has an incremental structure associated with it, because the two conditions listed above are satisfied (see the text preceding the consumption predicate in (45), where the amount of *bananas* involved in the eating event is predetermined, and see the presence of the demonstrative *ėti* 'these' in the consumption predicate).

(45) Segodnja utrom ja dal[PFV] Saše dva banana. V dannyj moment on est[IPFV] ėti dva banana. Odin on uže s"el[PFV].
'This morning I gave Sasha two bananas. At the moment he is eating those two bananas. He has already eaten one of them.'
(Russian; Mehlig 2012: 216)

According to the hypothesis under discussion, the complex creation/consumption predicates that gave rise to ungrammaticality in Russian (see Table 3) should become acceptable if the contextual conditions identified in Mehlig (2012) are met, as the predicates would then be given an incremental structure by the direct object. However, the prediction is not borne out. The same results as those listed in Table 3 are obtained in Russian if the contextual conditions discussed in Mehlig (2012) are met, as illustrated in (46) with an example based on the predicate in (12) (Dària Serés, p.c.).

(46) Segodnja utrom Deanne zakazali s-delat'
today morning Deanne.DAT commission.PFV.PST.PL PFV-make.INF
dve reznye kukly. V dannyj moment *ona režet ėti
two carved dolls.ACC in this moment she.NOM carve.IPFV.PRS these
dve kukly. Skoree vsego ona uže vy-rez-a-l-a odnu
two dolls.ACC probably she.NOM already PFV-carve-TH-PST-AGR one
iz nix.
of them
'This morning Deanne was commissioned to make two carved dolls. At the moment she is carving those two dolls. She has probably already carved one of them.'

Similar considerations apply in Slovak, which also seems to license a reading of the object as having an incremental structure associated with it under the conditions in Mehlig (2012) but does not allow complex creation/consumption predicates in such contexts (Natália Kolenčíková, p.c.). In the case of Serbian, modifying expressions equivalent to the Russian *Odin on uže s"el* 'He has already

eaten one of them' in (45) are compatible with predicates denoting events of consumption regardless of the contextual conditions in Mehlig (2012) (Predrag Kovačević, p.c.), yet complex creation/consumption predicates with unprefixed verbs are not licensed (see Table 3). The ungrammaticality of the predicate in (46) is accounted for by the account proposed in the present chapter; the predicate is not grammatical in Russian because it does not have a verbal prefix which fulfills the language's verb-framed requirement, by incorporating onto the *v* head.

In sum, the approach to Talmy's typology proposed in this chapter allows us to account for the kind of cross-linguistic variation related to the typology in the domain of predicates of creation/consumption regardless of whether an incremental structure is provided to the predicate by the verb, by a prefix of the verb or by a phrasal complement of the verb. In the next section, I propose that the present account of Slavic languages as verb-framed languages should be extended to Latin, which was argued to be a weak satellite-framed language, along with Slavic languages, by Acedo-Matellán (2010; 2016).

5 Were there complex creation/consumption predicates in Latin?

As observed in Talmy (2000), and extensively explored in Acedo-Matellán (2010; 2016), Latin behaves on a par with Slavic languages in regard to Talmy's typology, in that resultative predicates where the verb denotes a co-event are allowed as long as the Path is expressed by a verbal prefix. As such, Latin is predicted to allow complex creation/consumption predicates by previous neo-constructionist accounts (see Section 3.3). Some examples of alleged complex creation predicates from Latin are provided in Acedo-Matellán (2016) to prove this point. This goes against the prediction of the present account of Talmy's typology, according to which neither Latin nor Slavic languages, *qua* weak satellite-framed languages, should be able to license bona fide creation/consumption predicates in the absence of an incorporation process of *v*'s complement onto *v*. Indeed, the data discussed in Acedo-Matellán (2016) are surprising in light of the pattern displayed by Slavic languages in this respect. In this section, I argue that there is no clear reason for attributing a complex creation/consumption reading to the Latin examples provided in Acedo-Matellán (2016). Afterward, I present the results of a corpus search which point toward the conclusion that complex creation/consumption predicates are absent in Latin, in line with the prediction of the present approach.

The examples discussed in Acedo-Matellán (2016) are provided in (47) to (51).

(47) Qui alteri misceat mulsum.
who.NOM another.DAT mix.SBJV.AGR honeyed_wine.ACC
'He who makes honeyed wine for someone else.' (Latin; *Cic.* Fin. *2, 5, 17*)

(48) Vulnus [...] quod acu punctum
wound.NOM which.NOM needle.ABL puncture.PTCP.PFV.NOM
videretur.
seem.IPFV.SBJV.AGR
'A wound that seemed to have been punctured with a needle'.
(Latin; *Cic.* Mil. *65*)

(49) [Serpens] volubilibus squamosos nexibus orbes
snake.NOM looping.ABL.PL scaly.ACC.PL writhing.ABL.PL coil.ACC.PL
torquet.
twist.PRS.AGR
'The snake twists his scaly coils in looping writhings.'
(Latin; *Ov.* Met. *3, 41*)

(50) Viam silice sternendam [...] locauerunt.
way.ACC flint-stone.ABL strew.PTCP.GRDV.ACC establish.PRF.AGR
'They established that the way was to be paved with flint stone.'
(Latin; *Liv. 38, 28, 3*)

(51) Aeriam truncis [...] cumulare pyram.
high.ACC log.ABL.PL gather.INF pyre.ACC
'To build a high pyre out of logs.' (Latin; *Stat.*, Teb. *6, 84*)

I suggest that most of these examples are compatible with a reading as either involving hyponymous objects or displaying resultative predicates of change of state, therefore adopting a verb-framed strategy. For instance, *pyram* 'pyre' in (51) could be interpreted as a hyponym of *cumulare* '(lit.) cumulate'. Indeed, a creation reading of this verb is also found in verb-framed Italian, as (52) shows.[30]

[30]An anonymous reviewer asks me to elaborate on the relevance of the Italian example in (52) for the conclusion that the Latin example in (51) is not a satellite-framed construction. Both the Latin and the Italian example refer to a creation event in which a 'cumulation' is formed. As Hale & Keyser (1997) noted, the conceptual content of the verb in predicates of this kind (in the cases at hand, *cumulare*, meaning 'cumulate', or 'gather') points non-referentially to the nature of the entity effected during the event (e.g., in (51) and (52), a 'cumulation' of some sort). The object, in turn, directly refers to such an effected entity. For instance, the predicate in (52) can be paraphrased as 'make a gathering that *consists of* experience'. Similarly, the predicate in (51) can be paraphrased as 'make a gathering that *consists of* a pyre'. For this reason, direct objects of this type have been referred to in the literature as "hyponymous arguments" of the verb. As discussed in Section 3, predicates of this kind have been argued to involve the incorporation

(52) [...] il primo dovrà aver cumulato esperienza nella
the first must.FUT.AGR have.INF gather.PTCP.PFV experience in.the
grande distribuzione, il secondo sul prodotto e sul contatto
big distribution the second on.the product and on.the contact
con i grandi clienti.
with the big clients
'The first one must have gathered experience in large-scale distribution, the second one on the product and in dealing with large clients.'
(CORIS[31])

As for (48), the availability of *puncture a wound* (cf. (15)) in weak satellite-framed Slavic languages and in verb-framed languages seems to be very limited, but the Ukrainian speaker fully accepts it (Table 3) and the Basque speaker considers it marginally acceptable (Table 2), suggesting that this predicate is not entirely precluded in these language types. Finally, I suggest that examples such as (49) and (50) can be compatible with a change-of-state reading of the direct object, which would imply the adoption of a verb-framed resultative structure. For instance, a snake can twist its coils also if the coils have been previously formed, e.g., by the position of the body prior to the *twisting*. Similarly, an existing road can be ordered to be covered with flint stone, supposing, for instance, that it was unpaved before. The proposed syntactic structure of the Latin example in (50), assuming a change-of-state reading of the predicate, is provided in Figure (13).

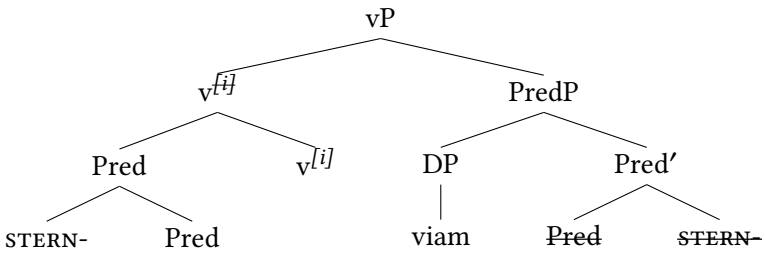

Figure 13: Syntactic structure of (50) (with a visual representation of the PF requirement (*[i]*) on *v*)

into *v* of a root e-merged as the complement of *v* (see Figure 3). Thus, they are expected to be well-formed in verb-framed languages. Assuming that Italian is a verb-framed language, that the construction in (51) can also be found in Italian, as (52) shows, provides additional evidence to the claim that such a construction is a verb-framed construction, whereby it does not constitute a counterexample to the proposal that Latin should be regarded as a verb-framed language.

[31] *Corpus di Riferimento dell'Italiano Scritto*, Università di Bologna.

In order to further substantiate the prediction that complex creation/consumption predicates could not be licensed in weak satellite-framed Latin, I carried out a corpus-based investigation checking the co-occurrence, in a creation reading, of verbs that can be associated with a manner interpretation with two direct objects that seem to be particularly productive in English complex creation predicates, namely *hole* (Lat. *foramen*) and *wound* (Lat. *vulnus*). The corpus used for Latin, comprising texts from the Early and Classical periods (up to A.D. 200), is the *Classical Latin Texts* by The Packard Humanities Institute.[32] The verbs selected, listed in (53), were taken from Acedo-Matellán (2016).

(53) *amburo* 'burn', *caedo* 'cut, knock', *cremo* 'burn', *frico* 'rub', *rado* 'scrape', *tundo* 'beat', *uro* 'burn', *verro* 'sweep'

Importantly, the English verbs corresponding to the Latin ones in (53) can give rise to creation predicates with *hole* or *wound* as effected object, as (54) shows.

(54) a. A discharge of those energies burned a hole in his forehead and killed him. (Ausensi & Bigolin 2023: 155)
b. [...] his words burned a wound inside her. (Google Books)
c. Dad cut a hole in his chest and made me pull his heart out. (COCA)
d. The Devil-Is-I pulled the knife he had used to cut a wound on his thumb and lunged forward at the leader of the twelve. (Google Books)
e. Weena knocked a hole in the wall. (COCA)
f. But I scraped a hole in it so I could see. (COCA)
g. [...] he scraped a wound on his nose that never cleared up. (Google Books)
h. I erased again and again until I had rubbed a hole in the paper. (COCA)
i. [...] the mooring line has rubbed a wound in the willow bark. (Google Books)
j. My 'beloved' boyfriend beat a hole in my roof and now it's awfully cold in there. (COCA)
k. A sudden shift in the wind swept a hole in the blowing snow. (Google Books)

[32] https://latin.packhum.org

The verbs in (53) were searched for by stem, while the objects were searched for in the nominative/accusative singular and plural forms.[33] None of the verb–complement combinations investigated provided relevant results. A verb-framed construction with *vulnus* 'wound' was found instead, as shown in (55).

(55) Sed uulnera facta igne dum sanescunt,
But wound.NOM.PL make.PTCP.PFV.NOM.PL fire.ABL while heal.PRS.AGR
defricare bubula urina convenit.
off_rub.INF bovine.ABL urine.ABL fit.AGR
'But while the wounds made with fire are healing, it is appropriate to cleanse them with bovine urine.' (*Col.*, De Re Rustica *6.7.4*)

I take this lack of evidence to tentatively suggest that Latin lacked complex creation/consumption predicates of the type found in satellite-framed languages, and needed to resort to verb-framed strategies in the domain of creation/consumption predicates in the same way as Slavic languages do. This is in line with the prediction, following from the present account, that complex creation/consumption predicates are unavailable in weak satellite-framed languages.

Picking up the discussion in Section 4.2 about the possibility that unprefixed complex predicates of creation/consumption may be disallowed in Slavic languages due to their lack of an incremental structure, it is relevant to notice that direct objects could be associated with an incremental structure giving rise to telicity in the predicate in Latin. The compatibility of the consumption predicate in (56) with the time span adverbial *intra duas horas* 'within two hours' illustrates this.

(56) [...] nitrosae aut amarae aquae polenta
nitrous.NOM.PL or bitter.NOM.PL water.NOM.PL cornmeal.ABL
addita mitigantur, ut intra duas
add.PTCP.PFV.ABL mitigate.IPFV.SBJV.PASS.AGR that within two.ACC
horas bibi possint.
hour.ACC.PL drink.INF.PASS can.IPFV.SBJV.AGR
'Nitrous and bitter waters are softened with added cornmeal, so that they can be drunk within two hours.' (*Plin.*, Nat. *24, 3, 4*)

Assuming, based on the discussion in this section, that complex creation/consumption predicates were not possible in Latin, such an absence cannot be attributed

[33] Being neuter, both *foramen* 'hole' and *vulnus* 'wound' appear as morphologically identical in their respective nominative and accusative forms.

to the predicate's lack of incrementality. The morphophonological account of Talmy's typology proposed in this chapter provides an alternative explanation of the phenomenon that is compatible with the observation that creation/consumption predicates could be telic in Latin without the presence of the prefix (see (56)).

6 Conclusions

I presented the preliminary results of a pilot study concerning the possibility of licensing complex creation/consumption predicates in Slavic languages. The results obtained were further compared with data gathered from native speakers of several satellite-framed languages and verb-framed languages. The study shows that Slavic languages, which are considered as fundamentally satellite-framed in the literature on Talmy's typology (Talmy 2000; Acedo-Matellán 2016), appear to behave on a par with verb-framed languages in disallowing creation/consumption predicates that involve a satellite-framed strategy.

Adopting a neo-constructionist perspective on argument structure, I have put forward a morphophonological approach to the variation related to Talmy's typology, understanding verb-framedness in terms of a morphophonological realization condition imposed at PF on the null *v* head involved in verbal predication. A null *v* is required to incorporate its complement in verb-framed languages. I have further argued that Slavic languages, and weak satellite-framed languages in general, should be regarded as fundamentally verb-framed languages, capturing the mandatory prefixation of the Path component in resultative predicates and the absence of complex predicates of creation/consumption in these languages as by-products of the verb-framed PF requirement on the *v* head.

With the present morphophonological account of Talmy's typology, I have additionally provided a solution to the minimalist conundrum whereby verb-framed languages seem to consistently lack the structure-building operation associated with the expression of a co-event in the verb, namely the operation of conflating a root with *v*. To the extent that the verb-framed PF requirement can be satisfied by means of prefixation, the compounding operation can indeed successfully take place in a verb-framed system, as shown by the availability of prefixed satellite-framed resultative predicates in weak satellite-framed languages.

Afterward, I have explored the prediction that a creation/consumption reading of predicates with manner-denoting verbs is available in Slavic languages when the predicate is perfectivized via internal prefixes, which have been argued to involve a resultative structure that receives a reading as involving an event of

creation/consumption on the basis of conceptual/pragmatic considerations. The data gathered from the native speakers of the Slavic languages tested confirmed the prediction.

Finally I have argued that Latin, as a weak satellite-framed language (Acedo-Matellán 2010; 2016), lacked complex creation/consumption predicates of the type found in bona fide satellite-framed languages in the same way as Slavic languages do. I have argued that this is the case based on the analysis of some alleged Latin complex creation/consumption predicates provided in Acedo-Matellán (2016), which have been shown to admit a reading either as involving a hyponymous object or as involving a resultative predicate of change of state. Afterward, I have presented the results of a corpus search supporting the prediction that complex creation/consumption predicates are not licensed in Latin. The results strengthen the general hypothesis that Latin and Slavic languages behave alike with respect to Talmy's typology (Acedo-Matellán 2016), meanwhile underpinning one of the main conclusion of the present account whereby weak satellite-framed languages should be considered as fundamentally verb-framed languages.

Abbreviations

ABL	ablative
ACC	accusative
AGR	agreement
CL	classifier
DAT	dative
FUT	future
GER	gerund
GRDV	gerundive
INF	infinitive
INS	instrumental
IPFV	imperfective
LOC	locative
M	masculine
NEG	negation
NOM	nominative
PASS	passive
PFV	perfective
PL	plural
POSS	possessive
PRF	perfect
PRS	present
PST	past
PTCP	participle
SBJV	subjunctive
SG	singular
TH	theme vowel

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