On the syntactic nature of manner-incorporation

Boban Arsenijević, Universitat Pompeu Fabra, Barcelona

b.arsenijevic<at>gmail.com

1. Introduction

Ever since Baker's (1988) extensive treatment of incorporation cross-linguistically, this topic has been in the center of linguistic attention both in formal and in typological, and descriptive approaches to language. In this paper, I build on the formal syntactic views of this phenomenon, especially on the analysis proposed by Hale and Keyser (1993). In particular, I try to give a positive answer to the question does manner-incorporation, just like object- and result-incorporation, proceed in syntax, arguing against the view that this is a lexical process that rather takes place at the conceptual interface of our lexicon (as suggested by Harley 2005). My argument relies on the data from S-C, where I point to the patterns of prefixation of verbs that incorporate different elements, and to the different types of cognate arguments which are closely related to the incorporated material. My argument can be briefly summarized in the following way. In prefixation, manner-incorporating verbs, just like the result-incorporating ones, shows a regular behavior in respect of the argument structure. The behavior of the two classes, however, differs, and in ways which can be derived from the different types of incorporated elements. Incorporation of the result restricts the verb to the telic template, while the incorporation of manner restricts it to a necessary involvement of an action component. In the former case, the argument structure is fully determined by the prefix, and in the latter case the prefix enriches the argument structure determined by the verb by one more argument – that of result. The second argument comes from the behavior of these verbs in respect of cognate arguments. I argue that, at very least in S-C, manner-incorporating verbs take cognate arguments realizing manner, object-incorporating verbs proper cognate objects, and that result-incorporating verbs cognate results. From here, and from the semantic similarities between the members of each of the three pairs, I conclude that cognate arguments lexicalize incorporated elements, possibly additionally specified. As cognate arguments are generated in syntax, this means that the incorporated elements, including incorporated manner, are syntactically derived. I propose a syntactic model of manner incorporation on a par with the models of result and object incorporation already present in the literature (based on Hale & Keyser's 1993 discussion), and show how the proposed analysis explains Rappaport Hovav & Levin's (2010) generalization that manner and result incorporation are in complementary distribution.

The paper is organized as follows. Section 2 introduces the problem and the relevant theoretical background. In section 3, I give one general argument for the claim that manner incorporation s a syntactic process. Section 4 presents the relevant data from S-C illustrating how the prefixation of verbs and its effects on argument structure depend on their incorporated material. In section 5 I present the data related to cognate arguments, using an asymmetry observed by Pereltswaig (1999), between an adjunct-like and an argument-like type of cognate objects in Russian. The same division is found in S-C. I show that whether a verb takes the former or the latter type of cognate objects fully depends on whether the verb incorporates manner or the direct object. In section 6, I propose a syntactic structure for the generation of the incorporating manner. Section 7 presents and discusses an apparent paradox, coming from the fact that sometimes elements of both manner and result incorporate in the

verb (contra Rappaport Hovav & Levin 2010), and offers an analysis that handles this clash. Section 8 concludes.

2. Verbs and their names

Linguists concerned with the mechanisms through which verbs with a richer lexical meaning are cross-linguistically derived have always given incorporation the central role in these processes (among others, Baker 1988, Hale & Keyser 1993, Harley 2005). Hale and Keyser argue that the incorporation of arguments into the verb is a syntactic process, even though its effects show up at the lexical level. They locate this process in what they call lexical syntax (L-Syntax), and show that, as predicted by their account, they indeed obey the same restrictions that can be recognized in the domain of syntax proper. Harley adds more arguments in favor of their analysis, by showing that event-argument homomorphism effects, typical for the relation between events described by the verb and their arguments, hold for the incorporated arguments in the same way they do for the non-incorporated ones. Let me briefly illustrate a prototypical structure of incorporation in their account.

Hale and Keyser formulate their model based on a VP structure in the spirit of Larson's (1988) VP shells: each of the structural arguments of the verb is derived in its own VP projection, as its specifier, and the arguments lexicalized through PPs are generated as complements of the lowest VP shell, which generates the direct object. When the complement of the preposition is a bare noun, and the other heads of t he VP shells structure are lexically empty, this noun head-moves, to first adjoin the head of the lowest VP, and then together with the adjoined head higher up to adjoin the head of the higher VP shell, the one of the agent argument in the example in (1a). The verbal stem derived from the noun in this way receives the verbal inflection and acts as a verb.

(1)   a.   John shelved the books.

b.

c.
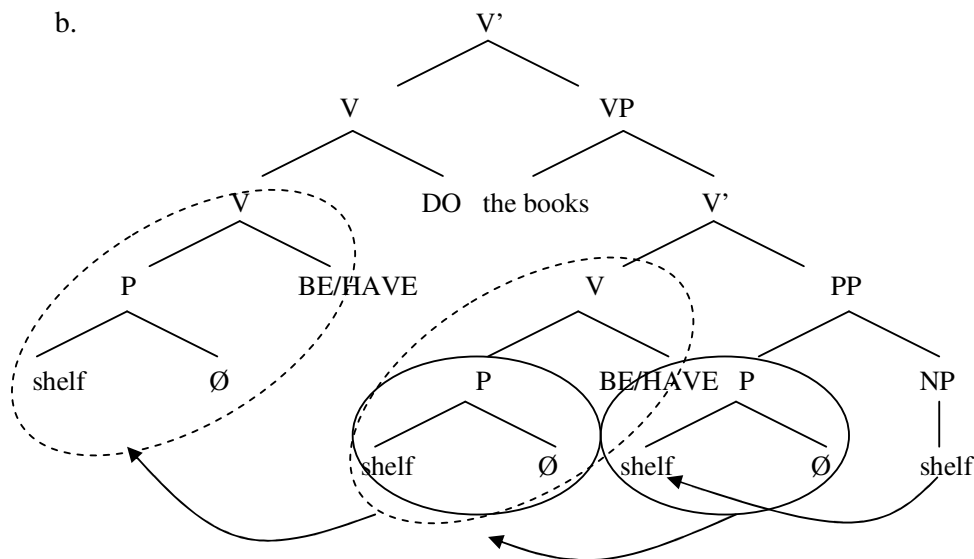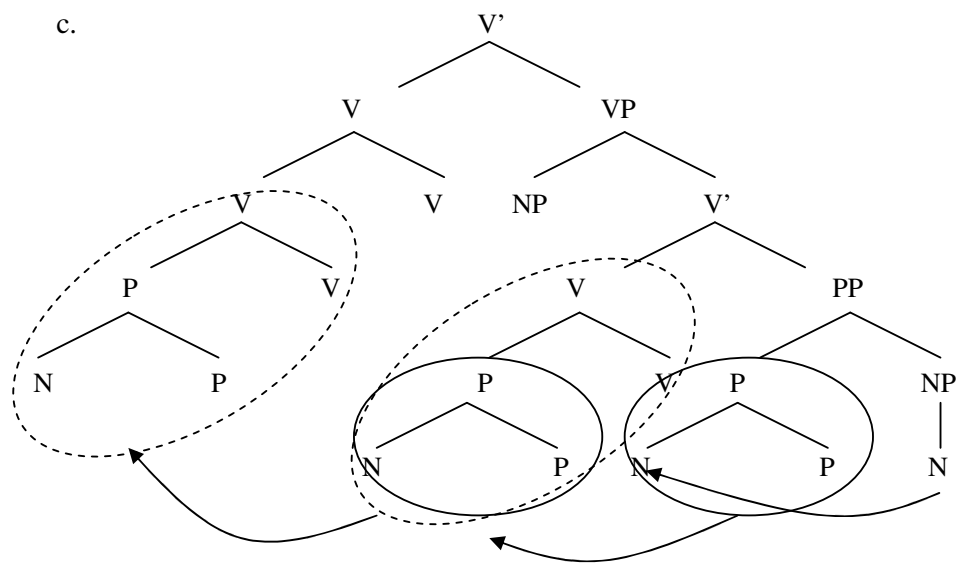
A general pattern of the syntactic model of incorporation is given in (1c), where category markers are used instead of real lexical elements.

Finally, it is one of the main supporting arguments for Hale & Keyser's model that it correctly predicts that among two arguments, a theme and a goal, the theme will be the one to incorporate into the verb. Only an argtument generated at the bottom of the structure may ever incorporate, as only this element may undergo head movement up to the position of the verb. The only possibility for a direct object to incorporate into the verb is then the argument structure has no goal or similar argument lower than the direct object. In such a case, if represented by a head, the direct object may head-move to the position of the verb, left-adjoin to it, and yield an object-incorporating verb. Unergative verbs are derived in this way.

(2)   The derivation of an unergative verb
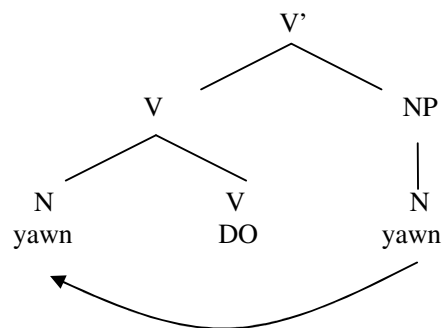
In her discussion, Harley provides a support for this account, but also recognizes a class of verbs that cannot be accounted for in this way: the verbs in which the incorporated element is the manner modifier. And while in her discussion, for the verbs like *drool*, *foal* or *dance*, Hale & Keyser's account receives additional confirmation, she notes that the verbs incorporating a manner component, such as *hammer*, *fit* or *smear*, are less regular in their behavior, and says of them that they are derived "by a mysterious, parametrically varying, illunderstood process

which I'll call *Manner Incorporation*" (Harley 2005: 44). Rather than deriving it syntactically, she suggests that manner incorporation is an extra-syntactic process having to do with our thoughts rather than narrow grammar.

Rappaport Hovav & Levin (2010) argue that manner and result incorporation are in complementary distribution. A verb incorporates manner or result, but never both. Moreover, action verbs are more prone to incorporate manner, as manner modifies their sole decompositional component, that of action. Telic verbs, involving a culmination, are likely to incorporate the result, as their structurally deepest semantic component.

In this paper, I argue, based on the empirical data from Serbo-Croatian (S-C), and on the theoretical background as sketched, that manner incorporation is a syntactic process as well, obeying syntactic restrictions, and showing similarities with structures with unincorporated manner modifiers. My arguments cruially rely on the situation with cognate objects, where two types of cognate objects may be observed: those denoting the theme or the result, and those specifying a manner of action. I first present the system of verb prefixation in S-C and the behavior of its cognate objects, and then provide arguments in favor of treating manner incorporation as a syntactic process. Let me note before all this that the two observations that Harley gives, that manner incorporation is a "parametrically varying" and "illunderstood" process, do not make a statement that it is not a syntactic phenomenon. That it is illunderstood should be taken as a call to get to a better understanding of it, and that it parametrically varies makes it just more similar to typical syntactic phenomena, which also often display parametric variation.

3. Non-bridging verbs

In this paper, I argue that manner incorporation must also be seen as a syntactic process, driven by syntactic structures and syntactic constraint. Current section presents one rather general argument in favor of the syntactic nature of manner incorporation, which concerns the syntactic effects of non-bridging verbs..

Non-bridging verbs are verbs which trigger certain syntactic effects in respect of that-deletion, islands and some other phenomena. Observe the asymmetry in (3).

(3) a. Who did John say that Mary kissed?

  b. *Who did John whisper that Mary kissed?

Both verbs are verbs of saying, but only one of them seems to trigger an island effect. The only difference between the two verbs seems to be that one of them also incorporates manner; in case of verbs of saying, it is always a manner of saying, and in this case it could be paraphrased as 'in a devoiced way'. This indicates that the presence of a marked manner in the lexical semantics of the verb triggers an island effect. Indeed, the literature on the issue recognizes two phenomena that seem to lead to effects of this kind: factivity of the complement implied by the verb and a manner component in the lexical semantics of the verb Kayne (1981).

Arguably, manner-of-saying verbs are manner-incorporating verbs. Hence, manner incorporation is linked with core syntactic effects such as islandhood. This is only expected to be the case if the incorporated manner is a syntactic object, with a position in the syntactic structure of the entire expression.

Other arguments I provide for the syntactic nature of manner incorporation are more specific for the data from S-C. I start by presenting some relevant facts from the S-C system of verb prefixation.

4. Serbo-Croatian verb-prefixes and incorporation

S-C verb prefixes come in two types, often referred to as the lexical and the superlexical prefixes. The lexical prefixes are characterized by contributing a resultative component to the meaning of the verb (4a), and often specifying the relation that characterizes the result, by a tendency to change the lexical meaning of the verb(4b), by sometimes deriving verbs from items that do not figure as words without the prefix(4c), and at the morpho-syntactic level by being closer to the verb than the superlexical ones (4d). Superlexical prefixes contribute a rather quantificational semantic component (4a), they do not affect the lexical meaning of the verb, they can only attach to items that do figure as words (4c'), and in stacking contexts, they attach further away from the verb, i.e. to the verb that already has all its lexical prefixes (4d') (but see Žaucer 2008 for arguments against such a clear division).

(4) a. plivati   → u-plivati   a' igrati → na-igrati
         swim   in^{LX}-swim   play   on^{SLX}-play
         'swim'   'swim in'   'play'   'play a lot/enough'

     b. slikati   → pre-slikati
         paint   over^{LX}-paint
         'paint'   'copy a picture/painting'

     c. oda-gnati   c' *po-gnati
         from^{LX}-chase   over^{SLX}-chase
         'chase away'

     d. na-pre-slikavati   d' *pre-na-slikavati
         on^{SLX}-through^{LX}-paint   through^{LX}- on^{SLX}-paint
                      'do a lot/enough of copying pictures'

While the aspectual and argument-structural effects of prefixation in S-C and other Slavic languages are quite well explored (in, among many others, Borik 2002, Filip 2003, Arsenijević 2006, Gehrke 2008, Žaucer 2008), its interaction with the type of incorporated element in the verb has, to the best of my knowledge, escaped the attention linguists engaged with Slavic verbal system. In this section, I present a typology of prefixed verbs based on the relation of the (semantic content of the) prefix with the incorporated item, pointing to certain regularities and interactions of this typology with the syntactic behavior of the verb. As the subject of the paper is lexical syntax, I only consider the lexical prefixes, although as the paper develops, references to superlexical prefixes will also be made.

Based on the relation between the prefix and the incorporated element, prefixed verbs can be classified into three groups. The first includes the verbs which, when added the prefix, preserve their argument structure, and add an additional goal-argument to it (5a, b). The other two groups includes verbs which always result in the same argument structure, irrespective of the argument structure of the verb that takes the prefix; the argument structure of this group of verbs involves an agent and a theme, with a causative component necessarily part of the verb's meaning (5c-d, e-f). The second type of verbs incorporate the preposition together with its complement, i.e. the entire result predicate. The third class does not even necessarily involve a result component. The prefix there contributes the meaning of an absolute change, of a full instantiation of a phase transition, from a previous situation in which an eventuality has not yet taken place, to the situation in which it has taken place and its consequences hold. The prefixed version of (5e) thus denotes that the strangling event took place in its full extent, with its characteristic phase transition of Marija switching from being alive to being dead. The prefixed version of (5f) entails that after the event took place, the hose is not straight any more, i.e. that the phase transition from it being straight to being twisted has taken place in its

full extent. In this class of verbs, the contribution of the prefix is similar to that typical of external prefixes (no result, and a pure aktionsart-related contribution), and hence I refer to them as (preudo-)externally prefixed verbs.

(5) a. Jovan je   trčao.   :   Jovan je   u-trčao.
        J   Aux   run   J   Aux   in-run
        'Jovan ran / was runing.'   'Jovan ran inside.'

     b. Marija je   čitala knjigu.'   :   Marija je   pro-čitala   knjigu.
        M   Aux   read   book   M   Aux   through-read   book
        'Marija was reading the book.'   'Marija read the book.'

     c. Cipela je   sijala.   :   Jovan je   u-sijao   cipelu.
        shoe Aux   shined   J   Aux   in-shined shoe
        'The shoe shined.'   'Jovan made the shoe shine.'

     d. Marija je   glačala kamen.   :   Marija je   u-glačala   kamen.
        M   Aux   polished stone   M   Aux   in-polished   stone
        'Marija was polishing the stone.'   'Marija polished the stone.'

     e. Jovan je   gušio   Mariju.   :   Jovan je   u-gušio   Mariju.
        J   Aux   strangle M   J   Aux   in-strangle Marija
        'Jovan was strangling Marija.'   'Jovan strangled Marija (to death!).'

     f. *Marija   je   vrnula   crevo.[1]: Marija je   u-vrnula   crevo.
        M   Aux   √turn.Pcl hose   M   Aux   in-twisted hose
                                               'Marija twisted the hose.'

Interestingly enough, the first group, the verbs which are added one argument to their original argument structure, include only manner incorporation verbs, and the second, verbs with a fixed argument structure in the prefixed form, includes only verbs which incorporate the result argument (the goal, the caused eventuality, or the final value of the property under change in the eventuality). Thus, *trčao* 'run' denotes a motion event with a particular set of manner features; *čitao* 'read' is an action, again with a particular set of manner features; *sijala* 'shined' in the prefixed form describes an eventuality specified to be caused by the subject; and finally the root √*glad* (close to the English √*slick*) in *u-glačala* 'polished', 'made slick' specifies the result of the process, namely a certain surface being slick to a certain contextually determined degree. The third class involves verbs of both derivational types, and as it involves prefixes that are, or look like, prefixes of the external type, it is less relevant for the topic of the paper.
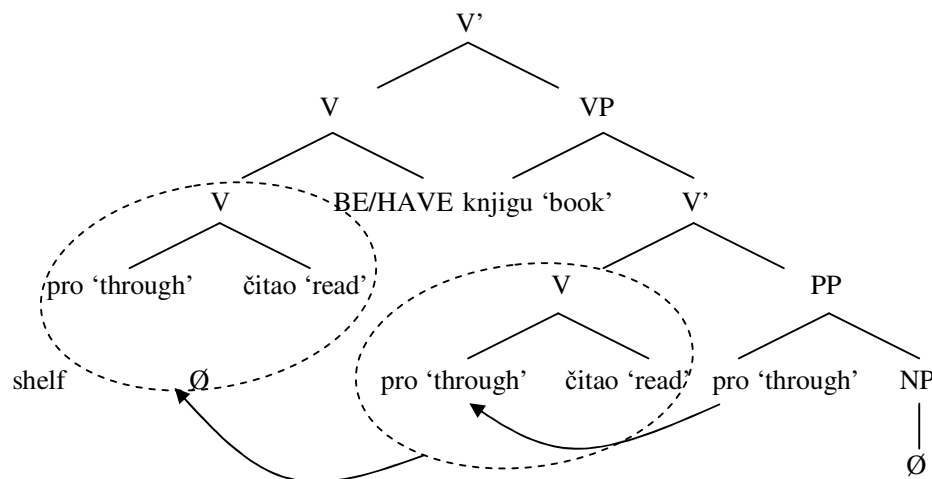
Considering that the prefix somehow corresponds to the preposition which specifies the result relation, we can generalize that in the first type of prefixed verbs, the prefix has an independently expressed argument in the clause, or such an argument is contextually determined (the location that Jovan runs into, and the extent of the book), while in the second type, the argument of the preposition is incorporated into the verb. In other words, one type involves the incorporation of manner and of the preposition specifying result without its complement, two components that are not directly related, while the other type involves the incorporation of the entire result phrase, i.e. the preposition and its complement. I give rough representations, using Hale and Keyser's model, in (6) and (6) so far joining Harley (2005) in staying agnostic in respect of the origin of the manner component (I assume the P element is
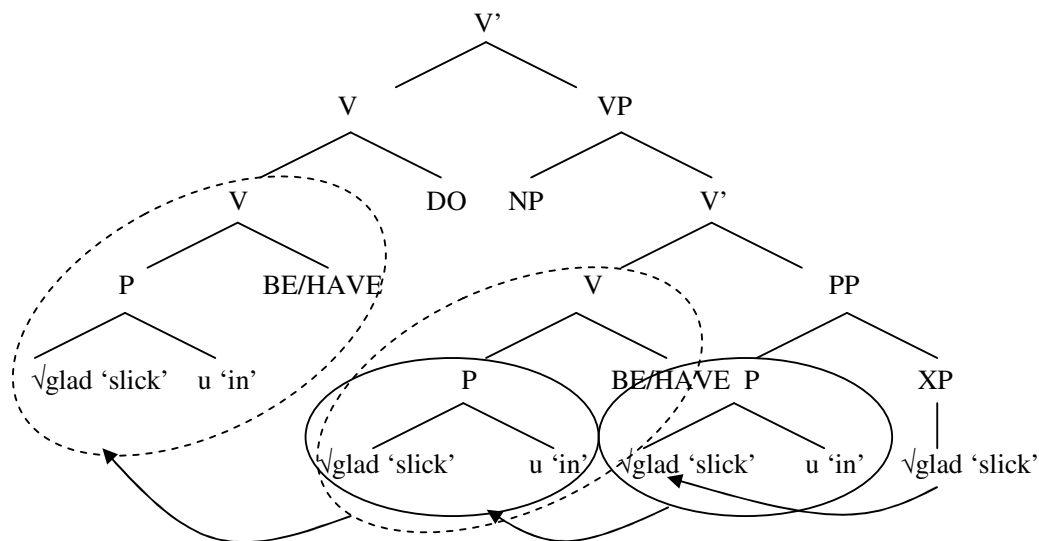
---

[1] In some dialects, this sentence is fine, and means that Marija returned the hose (e.g. after having borrowed it, or just removed it from its usual position).

lexically specified as a prefix, i.e. its ordering with respect to the verb does not reflect their syntactic relations).

(6)   Prefixed manner-incoprorating verb

```
                              V'
                    ┌──────────┴──────────┐
                    V                      VP
              ┌─────┴─────┐          ┌──────┴──────┐
              V      BE/HAVE  knjigu 'book'        V'
         ┌────┴────┐                         ┌─────┴─────┐
   pro 'through'  čitao 'read'               V           PP
                                        ┌────┴────┐    ┌──┴──┐
   shelf          Ø              pro 'through' čitao 'read' pro 'through' NP
                                                                          │
                                                                          Ø
```

(7)   Prefixed result-incorporating verb

```
                              V'
                    ┌──────────┴──────────┐
                    V                      VP
              ┌─────┴─────┐          ┌──────┴──────┐
              V       BE/HAVE    DO  NP            V'
         ┌────┴────┐                         ┌─────┴─────┐
         P                                   V           PP
    ┌────┴────┐                        ┌─────┴─────┐  ┌──┴──┐
  √glad 'slick'  u 'in'            P       BE/HAVE  P    XP
                              ┌────┴────┐       ┌───┴───┐   │
                         √glad 'slick' u 'in' √glad 'slick' u 'in' √glad 'slick'
```

Unlike the manner-incorporating class of verbs, which often take an overt goal introduced by the same preposition that incorporates into the verb, verbs of the result-incorporating class rarely appear with a goal argument, and when they do, this argument can be described as a 'cognate goal', as it expresses a goal which is already specified or strongly restricted by the semantics of the verb. Note that it is not necessary that the cognate goal is morphologically related, or semantically identical to the root of the verb – the root acts as just a restriction on the possible goals of the eventuality, which may be further specified by the actual goal argument.

(8) a. U-trapio je krompir u vrlo neobičan trap.
   in-trench.Pcl Aux potato in very unusual trench/hole
   'He stored the potato in a very unusual (potato-)trench.'

   b. U-većala je nacrt do nezamislivih dimenzija.
   in-big.Pcl Aux sketch to unthinkable dimensions
   'She enlarged the sketch to/till unthinkable dimensions.'

   c. U-domio je Petra u neku bučnu, veselu porodicu.
   in-home.Pcl Aux Petar in some noisy cheerful family
   'He housed Petar into a noisy, cheerful family.'

The analysis of such examples can go in two directions. One is to assume that the root in such cases extracts out of the result phrase and into the verb, and the other that the incorporation takes place in lexical syntax, and that the evacuated complement of PP in such a case may receive other material in syntax proper, as long as it subspecifies the originally generated material (e.g. in the way of Roeper et al. 2002, involving an abstract clitic). The overt expression of result, in the underlying structure, might as well be analyzed as an apposition to the incorporated root, which loses its apposition status once the root is incorporated and no more overtly expressed.

   Another interesting property of goal incorporating verbs, distinguishing them from the other two types, is that a large number of them are non-derived, in the sense that their stem without the prefix does not build grammatical verb forms, as illustrated by examples in (9), where (9c, d) are goal-incorporating, and (9a, b) and (9e, f) are, respectively, manner-incorporating verbs and verbs with (pseudo-)external prefixes. In other words, they exist only as prefixed verbs, which can be secondarily imperfectivized, but do not have a non-prefixed form. For some of these verbs, a non-prefixed form exists, but by a rule with different semantics (e.g. as a manner-incorporating verb stem), and usually with a different argument structure.

(9) a. Jovan je (u-)gurao kolica.
   J Aux in-pushed cart
   'Jovan pushed the cart (in).'

   b. Marija je (pro-)letela (kroz sobu).
   M Aux through-fly through room
   'Marija flew through (the room).'

   c. Jovan je *(u-)domio svoje štence.
   J Aux in-home.Pcl his puppies
   'Jovan found a home for his puppies.'

   d. Marija je *(u-)spavala dete. (but: Marija je spavala.)
   M Aux in-sleep.Pcl child M Aux slept
   'Marija set the child asleep.' 'Marija slept.'

   e. Jovan je (u-)tamanio buba-švabe.
   J Aux in-exterminate cockroaches
   'Jovan exterminated the cockroaches.'

   f. Marija je (u-)videla svoju gresku.
   M Aux in-seen her mistake
   "Marija realized/saw her mistake.'

To sum up, among the verbs typically considered to bear lexical prefixes, three different classes can be observed, on the basis of the incorporated element and its relation with the prefix: manner-incorporating verbs, goal-incorporating verbs and (pseudo-)externally prefixed verbs. (Pseudo-)externally prefixed verbs are interesting for the theory of external prefixation in Slavic languages, but not highly relevant for the present discussion, and therefore are mostly ignored in the remaining part of the paper. Manner-incorporating verbs exist independently of the prefix; the prefix adds to their meaning a resultative component, and expands their argument structure by one argument: the goal. Intransitive verbs remain intransitive (with the addition of a goal), and transitive verbs remain transitive (again with the addition of the goal). Goal-incorporating verbs depend on the presence of the prefix; in other words, goal incorporation is licensed by the prefix. This is natural, if the prefix is taken to represent an incorporated preposition from the result predicate (or some kind of concord with this preposition). The argument structure of the goal-incorporating verbs is fixed, and involves an agent (causer), a theme and a goal (which incorporates into the verb, but may be additionally specified by an overt goal, subcategorized by the incorporated component). In this case, the overt goal can be referred to as a cognate goal, as it follows exactly the same patterns as the more well known cognate direct objects. Issues of cognate arguments are more thoroughly discussed in the next section.

5. Cognate arguments

Cognate objects, also known as the cognate accusative, figura etymologica, internal (direct) object or implied (direct) object, have been in the center of linguistic attention for about two decades. An example of a cognate object is given in (10), where the meaning of the verb (*live*) implies the meaning of the direct object (*life*), i.e. the direct object in isolation of its modifiers does not contribute information which is not already contributed by the verb.

(10) John <u>lived</u> a happy <u>life</u>.

The main point of discussion was whether these syntactic constituents should be treated as arguments or as adjuncts. The former view was defended by, among others, Massam (1990), Macfarland, (1995), Mittwoch (1998) and de Swart (2007), and the latter by Jones (1988) and Moltmann, (1989). Pereltswaig (1999) shows, on the data from Russian, that in fact, there are two distinct types of cognate objects, one of which behave as adjuncts (her type A), and the other as arguments (her type B). Type A cognate objects exhibit the following properties:
1. they cannot bear strong determiners,
2. they can only have a narrow, in situ scope, and never scope out of the VP,
3. they do not delimit the event (via event-argument homomorphism relations),[2]
4. they do not passivize,
5. they do not A'-extract,
6. the question about a type A cognate object goes with *How…?* – not with *What … ?*
7. they can be coordinated with manner adverbs, and not with direct objects
8. in morphologically rich languages, type A cognate objects bear a different morphological form from typical direct objects (instrumental instead of accusative in Slavic, a special template in Semitic).

---

[2] Pereltswaig provides an example in which the cognate object does not unambiguously have a quantized quantity, but once it does, as in (i), we see that indeed no homomorphism effects can be observed.
(i) Jovan se smešio ironičnim osmehom sat vremena / *za sat vremena.
    J   Refl smiled ironic.Inst smile.Inst hour time   in   hour time
    'Jovan smiled ironically for an hour / *in an hour.'

The list given is not exhaustive – some language-specific properties are omitted for sake of space, and because they are not directly relevant for the present discussion. For examples and a discussion of each of these properties – see Pereltswaig (1999).

Pereltswaig observes, in passing, only two properties characteristic of cognate objects of type B (for which she notes that they are the only type of cognate objects in languages like English and French), since they are of little relevance for her topic of discussion. However, these properties are very important for the arguments made in this paper. The properties are:
1. in languages with both types of cognate objects – type B occurs only with unergative verbs,
2. in all of the mentioned respects, cognate type B objects pattern with normal direct objects.

S-C behaves exactly like Russian, and in the relevant respects also similar to Hebrew, Vietnamese and Edo, languages discussed by Pereltzwaig. A minimal pair between the type A and type B cognate objects in S-C is given in (13).

(11) a. Jovan je   voleo ogromnom   ljubavlju.
     J   Aux   loved great.Inst   love.Inst
     'Jovan loved with a great love.'

   b. Jovan je   mučio   tešku   muku.
     J   Aux   tortured   heavy.Acc torture.Acc
     'Jovan suffered heavily.'

Hence, for all intents and purposes of the discussion of cognate objects and incorporation, S-C data are representative of the important phenomena involved.

There is a clear correlation between the two issues: the type of cognate objects that a verb takes and the type of incorporation through which the verb is derived. Pereltswaig observes that only some unergative verbs take type B cognate objects. In other words, the only class of verbs derived, in Hale & Keyser's terms, via direct object incorporation, is the only class of verbs able of taking cognate objects that indeed behave like direct objects. How about the verbs that may take type A cognate objects? Crosslinguistically (looking at languages that do show the distinction between the two types), this class involves verbs like smile, criticize, read, pick, run, love – all of them verbs derived via manner-incorporation. To the extent that my judgments with respect to the type of incorporation are correct, all the verbs that I found in the literature, and all those from S-C, that combine with type A cognate objects are manner-incorporation verbs. To summarize: object-incorporating verbs take cognate objects that behave like proper direct objects, and manner-incorporating verbs take cognate objects that behave like adjuncts, more precisely – like manner modifiers.

(12)

a. Manner-incorporating unergatives	b. Object-incorporating unergatives
trčati brzim trkom / *brzi trk runs [fast run].Inst [fast run].Acc	pevati lepu pesmu / *lepom pesmom sing [beautiful song].Acc [beautiful song].Inst
skočiti dugim skokom / *dugi skok jump [long jump].Inst [long jump].Acc	sanjati ružan san / *ružnim snom dream [ugly dream].Acc [ugly dream].Inst
pasti teškim padom / *težak pad fall [heavy fall].Inst [heavy fall].Acc	plesati divlji ples / ?divljim plesom dance [wild dance].Acc [wild dance].Inst

De Swart (2007) argues that cognate objects of the type B are not really cognate objects, but proper direct objects, as they can appear without modification. Nevertheless, it is uncontroversial that they contribute information that is already part of the meaning of the verb, and that the verb may, and most often does, appear without an object. Moreover, they share the same root with the verb. Perhaps the issue of cognate objects is not as black-and-white as usually presented, but in any case, type B cognate objects share some relevant properties with those of type A.

The aggregate picture is thus the following: there are three relevant kinds of cognate arguments: cognate objects, cognate manners and cognate goals (for this class, see examples in (8), which served to introduce the problem of cognate arguments). All of them are syntactic objects, generated in particular syntactic positions, and all of them are also arguments that may incorporate into the verb. This strongly suggests that incorporated manner, which is tightly related to cognate manner expressions, undergoes incorporation that is mediated by syntax and obeys syntactic restrictions.

To make it more precise, the link that I want to observe and use as a guide in constructing an analysis of manner-incorporation is that cognate arguments, in the typical case, share their root with the verb, and that the incorporation analysis explains exactly how a root from a certain syntactic position moves and incorporates into the verb. In other words, cognate arguments must be somehow related to the elements incorporated into the verb. This presents Harley (2005)'s stance is too pessimist, in the sense that manner-incorporation must also be syntactically driven. The next section proposes an analysis of manner-incorporation.

6. Manner-incorporation through syntax

Certain verbs in S-C allow for both types of cognate objects, those of type A, as in (13a), and those of type B, as in (13b).

(13) a. Jovan je   živeo srećnim   životom.
         J   Aux   lived   happy.Inst life.Inst

     b. Jovan je   živeo srećan   život.
         J   Aux   lived   happy.Acc life.Acc
         'Jovan lived a happy life.'

Unless we drop the established link between type B cognate objects and manner-incorporation, this observation seems to indicate that there are two verbs *živeti* 'live' – one incorporating manner and the other the direct object.

I propose an analysis of manner incorporation that accommodates these facts without having to postulate double lexical entries in situations of the type illustrated in (13). The analysis treats what is described as manner as a complement of a light direct object. Hence, it is an argument of the incorporated (usually null) object. By virtue of additional specification of the incorporated material, it adds indirect specification of the event-kind denoted by the verb. This indirect specification is intuitively recognized as manner modification. The targeted element, the complement of the (null) direct object, incorporates into the verb by head-moving, first to the head of the phrase in the direct object position, and then from there to the head(s) of the dominating VP(s). The analysis is schematically presented in (14); the segment in grey color is active only in transitive manner-incorporating verbs (*throw*, *push*, *strangle*).

(14) 'Manner'-incorporation

Cognate objects of type A are then also generated in the position of a complement of a (null) direct object. More precisely, they are generated as appositives of the incorporated element.

(15) a. Jovan je   živeo ~~životom~~ srećnim   životom.
        J   Aux   lived life   happy.Inst life.Inst
        'Jovan lived a happy life.'

   b. [$_{VP}$ [$_{NP}$ Jovan] [[$_{√}$life$_i$ Ø] BE/HAVE] [$_{NP}$ ~~[$_{√}$life$_i$ Ø]~~ [$_{NP}$ ~~√life$_i$~~, a happy life]]]

Once the incorporation takes place, the apposition is left alone in its position, and it figures as the actual type A cognate object. Moreover, if we strictly follow Hale & Keyser (1993), then part of this process, that related to incorporation, takes place in lexical syntax, while the other part, with the apposition, takes place in the sentential syntax; the conflation in (15b) thus has no syntactic reality as such, but unfolds through two different processes in two syntactic (sub-)modules.

   The analysis proposed includes a copy of the incorporating element in the direct object position. As, in sentential syntax, this argument can also take an apposition, this predicts that in certain cases there will be type B cognate objects for verbs that normally take cognate objects of type A.

(16) a. Jovan je   živeo srećan   život.
        J   Aux   lived happy.Acc life.Acc
        'Jovan lived a happy life.'

   b. [$_{VP}$ [$_{NP}$ Jovan] [[$_{√}$life$_i$ Ø] BE/HAVE] [$_{NP}$ ~~[$_{√}$life$_i$ Ø]~~ [$_{NP}$ ~~√life$_i$~~], a happy life]]

That some verbs cannot have both types of cognate objects is rather a matter of pragmatics (i.e. world knowledge, in the sense of Borer's 2005 exo-skeletal views), most drectly related

to the acceptability of an incremental interpretation of the incorporated element, and its consequently also of its subspecification.in the intermediate landing site.[3]

This analysis is further supported by an observation made about Slavic languages by Caha (2007), who notes that the inetrumental case often alternates with the accusative case, and that this alternation takes place when the argument marked with the instrumental case moves to a higher position. He gives the general pattern in (17) (Caha allows for other combinations of cases to undergo this process, but the instrumental-to-accusative pattern is one of the two most prominent ones).

(17) Caha's case alternation ('peeling') mechanism
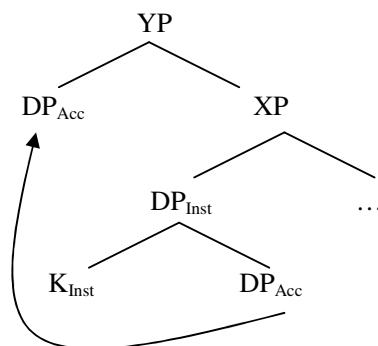
Without necessarily committing to Caha's peeling-analysis, which is indeed further supported by the present data, I argue that exactly this general pattern is in place in the case of verbs allowing both type A and type B cognate objects, and that the reason why the same verb may take a cognate object marked with accusative as well as one marked with instrumental is the same type of movement that stands behind other alternations between these two cases (see Caha 2007 for a convincing explanation).

I argued in this section, that manner incorporation, just like goal- and object-incorporation, is mediated by syntax. This expands the domain of syntax, in comparison with Harley (2005), who states that manner-incorporation is not syntactic, but rather a matter of the conceptual system, mediated by thoughts or some other extra-grammatical module. Harley concentrates on arguing that object- and result- incorporation go via syntax. Her arguments can be summarized in the following way: syntactically realized objects and goals often enter an event-argument homomorphism relation with the described event. The same appears to hold for incorporated goals and objects. As event-argument homomorphism is argued to be a syntactically conditioned effect, this implies that goal- and object-incorporation are indeed syntactic processes.

---

[3] Note that in Russian a further restriction is imposed: the instrumental cognate object in an example like this one goes only with the indefinite verb form, and the accusative one only with the perfective one, which further strengthens the present view that the lexicalization of the 'manner argument' in the direct object position imposes a measuring out interpretation:
(i)   Ivan   prožyl   veseluyu žizn'/*veseloy   žizni.
      I   livedPERF   happy life.Acc/Inst
(ii) Ivan   žyl   veseloy žizni /*veseluyu žizn'.
      I   livedPERF   happy life.Inst/Acc
      'Ivan lived a happy life'
I am grateful to Olga Borik (P.C.) for pointing this fact to me.

I believe that her observations provide a major component to the explanation of the existence of two types of cognate objects, and two types of incorporated elements in unergative verbs. Whether the incorporated element/cognate object may felicitously be conceptualized as incremental to the respective eventuality is probably a prominent pragmatically based factor in favoring or ruling out one or the other type of incorporation/cognate objects. Ergative verbs taking only type A cognate objects are those in which the eventuality may hardly map onto any dimension of the relevant argument, and ergative verbs taking type B cognate objects are those in which this mapping is important for the derived description of the eventuality. Verbs in which both interpretations are felicitous and where the difference is pragmatically important for the derived expression are those in which both types of cognate objects are used. Nevertheless, these verbs are still 'manner'-incorporating verbs (in the sense that they still incorporate the instrumental complement of the direct object rather than the direct object itself).

The analysis as presented makes a strong prediction in the domain of psycho-linguistics. Ergative verbs taking type A cognate objects (i.e. 'manner'-incorporating ergative verbs) have a richer syntactic structure than those taking only type B cognate objects. This is because the former incorporate the complement of their direct object, via an intermediate step of head-movement, and the latter the direct object itself. It is thus expected that the processing of the 'manner'-incorporating ergative verbs is more demanding than that of the object-incorporating ergatives. The view in which unlike object-incorporation, manner-incorporation involves no syntax, makes exactly the opposite prediction, as verbs come to syntax ready-made, hence no incorporation has to be processed syntactically.

And finally, this analysis explains Rappaport Hovav & Levin's (2010) generalization of manner/result complementarity. Both these components can incorporate only if they are at the bottom of the relevant structure. And as the structure can have only one bottom, only one of them can incorporate into the verb. Note that without a syntactic analysis of manner incorporation, this generalization comes as a surprise.

7. Manner and result together

Let me now go back to the regularities observed in section 3, before I discuss them in relation to the proposed analysis of manner-incorporation. There are three classes of prefixed S-C verbs, depending on their way of derivation and their argument structure. One class involves (pseudo-)externally prefixed verbs, which have not received an analysis yet and are less relevant for the topic of this paper. Out of the remaining two classes, one involves only verbs derived by manner incorporation, and is characterized by preserving its (in)transitive nature after prefixation, and by the ability to take non-cognate goals introduced by the preposition corresponding to the prefix. No direct relation is established between the prefix (or the corresponding preposition) and the incorporated element. The third class involves only verbs derived by goal-incorporation; these verbs are only well-formed with the prefix (the non-prefixed counterpart is not a word of S-C), they are never intransitive – they necessarily take a causer and an undergoer, and if they can take a goal, the goal will show properties of cognate arguments. The incorporated nominal element acts as the complement of the prefix (i.e. the preposition corresponding to it, which is only lexicalized if a cognate goal is part of the expression).

In the case of goal-incorporating verbs, the situation is clear, and the analysis presented in the previous section can be straightforwardly implemented, assuming that the prepositional element ends up word-initially due to a lexical specification for proclisis. In the case of manner-incorporating verbs, one issue calls for a comment. Manner-incorporating verbs require that the direct object, with its complement, be at the bottom of the structure, in order

for head-movement to proceed along the verb's line of projection. However, internally prefixed verbs all involve a (not necessarily lexicalized) goal-phrase, which should be generated within the structural domain c-commanded by the verb. This position is also below the direct object, and hence also below its incorporating complement. In such a structure, the direct object and its complement are not at the bottom of the structure, and the derivation cannot proceed.

(18) Result and manner in competition
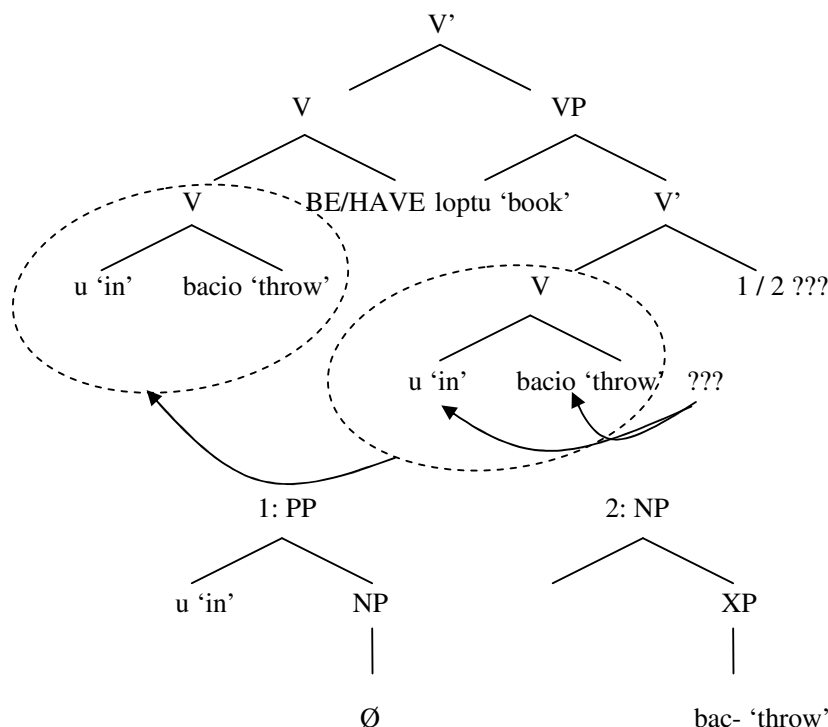
The same position is targeted by both the PP in which the result component is specified (1 in the schematic representation), and the NP in which the manner component is generated (2). Whichever we consider generated in the complement of the lower V, one will be blocked from the structure. Conflating them is not an option either, as it would entail that the XP specifying manner is the complement of the preposition and hence also the actual goal.

 A possible way out is to consider lexical syntax a separate domain, insensitive to the derivations of the sentential syntax.[4] After lexical syntax, the material it deals with remains latently present (i.e. it may take appositional modification), but does not play a role in the syntactic processes. While the distinction between the lexical syntactic derivations and the sentential ones, appears crucial for the applicability of the analysis to prefixed manner-incorporating verbs, it does not necessarily imply that there are two syntactic (sub-)domains. It is possible that within the same syntactic module, the lexical and the sentential derivations simply belong to different cycles.

---

[4] For sake of clarity, I take over Hale & Kayser's (1993) view of syntax. The same division can be formulated in terms of at least some other theories too, for instance as a matter of different phases, but this is beyond the scope of this paper.

A view based on different cycles for each incorporating argument is further supported by the following considerations. In the manner-incorporating cases, both the complement of a (null) direct object (surfacing as manner) and the preposition of the goal phrase need to incorporate into the verb. This means that even the lexical derivation must go in two different steps: 1. the incorporation of the complement of the direct object, and 2. the incorporation of the preposition. Within one cycle, as discussed above, one operation would be blocked by the other. Indeed, that the verb without the prefix is derived first predicts that such a verb will be well-formed in S-C, as is the case in manner-incorporating verbs illustrated in (19a-b). In goal-incorporating verbs, where both the goal and the preposition incorporate together, the verb without the prefix is normally ill-formed. This is illustrated in (19c-d), repeated from (9).

(19) a. Jovan je   (u-)gurao   kolica.
J   Aux   in-pushed   cart
'Jovan pushed the cart (in).'

b. Marija je   (pro-)letela   (kroz   sobu).
M   Aux   through-fly   through   room
'Marija flew through (the room).'

c. Jovan je   *(u-)domio   svoje   štence.
J   Aux   in-home.Pcl   his   puppies
'Jovan found a home for his puppies.'

d. Marija je   *(u-)spavala   dete.   (but: Marija je   spavala.)
M   Aux   in-sleep.Pcl   child   M   Aux   slept
'Marija set the child asleep.'   'Marija slept.'

There are even data in English that seem to call for a similar analysis. Koontz-Garboden & Beavers (2010) argue that there are verbs which indeed involve roots that simultaneously denote both the result and the manner of an eventuality. They provide arguments that what they refer to as manner of killing verbs are really verbs whose roots specify both a manner and a result.

(20) John hanged Bill (#and Bill lived for another ten years) (#with a guillotine).

The sentence, as they analyze it, entails a result (hence Bill cannot continue to live as the result of hanging is not being alive), and manner (hence a contradiction with the PP specifying a different manner).

Considering the analysis proposed in this paper, these facts could also be explained as a recursive incorporation: the result and manner incorporate in different cycles, one first and then the other. This may seem in clash with Koonz-Garboden & Beavers, who explicitly argue that result and manner are semantic component of one and the same root, i.e. that no structural decomposition can be attested. Their crucial piece of evidence comes from the scopal behavior of these verbs in combination with modifiers like *again*.

(21) John electrocuted the zombie again. (having undergone electrocution again, #being dead again)

They point out that this sentence can only mean that the zombie died from electrocution caused (and controlled) by John. It cannot mean that the zombie was originally killed in some other way, and now become dead again, this time via electrocution.

Obviously, the zombie is chosen as the undergoer because zombies are among a few kinds of beings that can become dead more than once. But can they really? And what does it mean for a zombie to become dead? Is zombie alive, and is this way of being alive the same as the

way of a regular human? And is an electrocuted zombie dead or alive? Is it a zombie at all? It seems to me that these examples actually show that manner of killing verbs do not entail the result of being dead, as zombies are either dead both before and after electrocution, or they are alive in both intervals, or they are never really alive or dead. The strongest conclusion is that manner of killing verbs do not entail the result of being dead, and the weakest one is that zombie examples seem a little bit problematic.

How about regular humans? Google provides thousands of examples for "survive(d/s) hanging", "survive(d/s) electrocution", and barely any for "survive guillotine" (among the nine that I found, several are in the form of the question *How do you survive a guillotine?*, and the rest are about video games). This indicates that the 'canceling of result' in (20) is not necessarily so odd, provided the right context, and that to the extent it is – this is rather a matter of inference relying on real world knowledge, than a real entailment of the verb. In other words, manner of killing verbs are certainly manner-incorporating verbs, but the result-incorporation part is not so certain. Consequently, the scopal facts in (21) actually rather show that the result component is not part of the narrow semantic representation of this eventuality, and hence *again* scopes only over the manner component. The S-C examples involving prefixed manner-incorporating verbs differ from this type of data in allowing for both the restitutuive and the repetitive interpretation of again.

Koonz-Garboden & Beavers (2010: 7) indeed do recognize the fact that manner of killing verbs might not entail the death of the undergoer, but they maintain that these verbs do entail a kind of result. For instance, guillotining a zombie entails that the zombie is headless (in a set of final intervals of this eventuality), i.e. that crucifixion "encodes a result, specifically a change of location, as one has to be hung upright in a particular configuration in order to be crucified." They continue: "At the same time, this has to be done in a particular manner – with nails/rope, a crucifix, etc." My point here is that a) *guillotine* does not entail, but does infer the result of being headless: it really only denotes the manner, and by all we know, this manner infers that one loses his head (the reason why "survive guillotining" is less frequent than "survive hanging") and that b) crucify entails the result, but not really any manner (nails/rope can be replaced by glue, tape, magic, staples, and the crucifix itself is of course entailed, but as the location of the result). Rather than bringing Rappaport Hovav & Levin's (2010) generalization about the complementarity of manner and result in question, this set of data actually confirms it. It is surprising that verbs of manner of killing, which, in a functionalist perspective, should tend to entail the result of being dead, still resist this entailment, and the fact that they do is predicted by Rappaport Hovav & Levin's generalization.

8. Conclusion

The paper contributes to the discussion going on around the question of which elements may incorporate into the verb, and how this incorporation takes place. It is an established view in the field that result- and object-incorporation are syntactically driven. I argued that the same holds of manner-incorporation. I presented a set of data from S-C, and argued that the regularities in argument structure linked to two different patterns of incorporation, that of manner- and that of result-incorporation provide support for the view that manner-incorporation proceeds in syntax. Even stronger support for this view comes from the behavior of cognate arguments. Three different types of cognate arguments are observed: a cognate object, a cognate result and a cognate manner. I argued based on argument structural regularities that these arguments are all tightly related to the respective incorporated elements: the cognate object is cognate because it (partly) recapitulates the incorporated object, the cognate result recapitulates the incorporated result, and the cognate manner recapitulates the incorporated manner. As all these types of cognate arguments are clearly syntactically

17

generated, which entails that the incorporated elements are syntactically derived as well (else we would not expect them to be conditioned by the same argument-structural configurations). The analysis offered in the paper opens new perspectives for the research of both argument incorporation and the typology of cognate arguments.

Literature

Arsenijević, Boban. (2006) *Inner aspect and telicity: The decompositional and the quantificational nature of eventualities at the syntax-semantics interface*. Utrecht: LOT.

Baker, Mark. (1988) *Incorporation: A theory of grammatical function changing,* The University of Chicago Press.

Borer, Hagit. (2005) *The normal course of* events*: Structuring sense vol II*. Oxford: Oxford University Press.

Borik, Olga (2002) *Aspect and reference time*. Utrecht: LOT Publications.

Caha, Pavel. (2007) Case movement in PPs. In *Nordlyd 34.2: Special issue on space, motion, and result*, edited by Monika Bašić, Marina Pantcheva, Minjeong Son, and Peter Svenonius, pp. 239 – 299. Tromsø: University of Tromsø.

Filip, Hana. (2003). Prefixes and the delimitation of events. *Journal of Slavic Linguistics* 11.1, 55-101.

Gehrke, Berit. (2008). *Ps in motion: On the semantics and syntax of P elements and motion events*. Utrecht: LOT.

Hale, Kenneth. and Samuel J. Keyser (1993) On argument structure and the lexical expression of syntactic relations. In Ken Hale and Jay Keyser (eds.) *The View from Building 20: A Festschrift for Sylvain Bromberger*. Pp. 53-108. MIT Press.

Harley, Heidi. (2005). How do verbs get their names? Denominal verbs, manner incorporation and the ontology of verb roots in English. In N. Erteschik-Shir & T. Rapoport (eds.). *The Syntax of Aspect*. 42–64. Oxford: Oxford University Press.

Jones, Michael A. (1988) Cognate objects and the case filter, *Journal of Linguistics*, 24, 89-111.

Kayne, R. 1981. ECP Extensions. *Linguistic Inquiry* 12, 93-133.

Koontz-Garboden, Andrew & John Beavers (2010) Manner and result in the roots of verbal meaning. MS. The University of Manchester/The University of Texas at Austin. (http://comp.ling.utexas.edu/~jbeavers/manner-result-working.pdf, last accessed on December 23rd 2010).

Larson Richard. (1988). On the double object construction. *Linguistic Inquiry*, 19(3), pp. 335-391.

Macfarland, Talke. (1995) *Cognate objects and the argument/adjunct distinction in English*, Ph.D. dissertation, Northwestern University, Evanston, Illinois

Massam, Diana. (1990) Cognate objects as thematic objects, *Canadian Journal of Linguistics*, 35, 161-190

Mittwoch, Anita. (2008) Cognate objects as reflections of Davidsonian event arguments, ms., to appear in Rothstein, Susan (ed.) *Events in Grammar*, 309-332, Dordrecht, Kluwer

Moltmann, Friederike. (1989) Nominal and clausal event predicates, *Papers from the 25th Annual Regional Meeting of the Chicago Linguistic Society*, 300-314.

Pereltsvaig, Asya. (1999) Two classes of cognate objects. In Kimary Shahin, Susan Blake, and Eun-Sook Kim (eds.) *The Proceedings of the WCCFL XVII*, 537-551. Stanford, CA: CSLI Publications.

Rappaport Hovav, Malka. & Beth Levin. (2010) Reflections on manner/result complementarity, in E. Doron, M. Rappaport Hovav, and I. Sichel, eds., *Syntax, lexical semantics, and event structure*, Oxford University Press, Oxford, UK, 21-38.

Roeper, Tom, Snyder, William, and Kazuko Hiramatsu. (2002) Learnability in a minimalist framework: root compounds, merger, and the syntax-morphology interfac   In I. Lasser (ed.) *The process of language acquisition*. Frankfurt: Peter Lang Verlag.

de Swart, Peter. (2007) *Cross-linguistic variation in object marking*. Utrecht: LOT.

Žaucer, Rok. (2008) A VP-internal/resultative analysis of 4   "VP-external" uses of Slavic verbal prefixes. PhD diss., University of Ottawa.