# Complex types in the (morphologically) complex lexicon

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## Abstract

This paper deals with the event/result meaning contrast displayed by most deverbal Action Nominals (AN). We claim that this intriguing pattern of inherent polysemy is peculiar when compared with standard cases of dot objects because the result sense is temporally and causally depended on the event sense. We attempt a formal modelling of the lexical representation of nominals derived from creation and re-description verbs (e.g. *construction*, *translation*) based on this insight, inclusive of Event Structure and Qualia Structure representations significantly different from the proposal in Pustejovsky (1995). Finally, we argue that troubles with co-predication are the direct indication of the internal asymmetry between the types that make up the complex, and can be explained in relation to different syntactic and semantic requirements of the event and result types.

## 1    Credits[1]

This paper is the result of cooperation between the co-authors initiated in occasion of the JSM 2009, held in Paris in April 8-9, 2009.

## 2    Introduction

This paper deals with a polysemy pattern displayed by those deverbal nominals usually ac-

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[1] This paper represents the outcome of a joint effort between the co-authors. However, for the specific concerns of the Italian Academy only, Melloni is responsible for sections 1-4.1 and Ježek for sections 4.2-8.

knowledged as *Nomina Actionis* or Action Nominals (AN). The event/result meaning contrast displayed by many of these nouns (e.g. *construction*, *development*, etc.) has been the subject of several theoretical investigations, especially because of the challenging syntactic corollaries related to their semantic ambiguity (cf. Grimshaw 1990 and Alexiadou 2002, among others). Much less, however, has been the attention paid to the phenomenon from a lexical-semantic perspective. Among others, Asher (1993) and Pustejovsky (1995) tackled this issue focusing on the syntactic and semantic structures of the base verbs, and pointing to different formal solutions. Based on the achievements of previous works on polysemy (cf., a.o., Copestake and Briscoe 1995), the overall aim of this paper is to show that the event/result polysemy of deverbal nominals is a special case of inherent polysemy (i.e. *complex type* or *dot object,* cf. Pustejovsky 1995), since it is dependent on the semantics of the base verb (its semantic structure but also more idiosyncratic meaning aspects) and on the specific properties of the suffixes involved in the nominalization process (section 3). The analysis is focused on nominals derived from creation and re-description verbs and attempts a formal modelling of their lexical representation (section 4), inclusive of Event Structure and Qualia Structure representations significantly different from the proposal in Pustejovsky (1995). Finally, the special nature of AN dot types, i.e. the internal asymmetry between the types which make up the complex (section 5), is discussed in relation to the troubles of co-predication generally attested with this class of nominals (sections 6 and 7).

## 3 Inherent Polysemy

Let us open the discussion on AN polysemy by clarifying a claim introduced above, i.e. that their polysemy is 'inherent'. We argue in fact – w.r.t. prototypical instances of event/result nominals, such as *construction, translation* or *development*– that the result sense is not 'shifted' from the event sense in context (as with 'meaning transfers', cf. Nunberg 1995). We claim instead that the event/result polysemy is *lexically* specified, i.e. available by virtue of the semantics inherent in the noun itself. In this view, the context selects the relevant reading, but cannot be held responsible for the creation of the result-object sense.[2] Our claim rests upon the contention that all the elements to obtain the polysemy aspects of the derived nominal can be found in the semantic structure of the base verb and of the forming suffixes, and are inherited in the derivation process. For space limitations, we shall limit the present discussion to a brief analysis of base verb semantics (cf. Melloni 2006, 2007 for elaboration on affixal semantics).

### 3.1 Results and complex events

As acknowledged in the literature, causatives and other accomplishments are optimal candidates for yielding polysemous ANs. Capitalizing on relevant work on event semantic representation (a.o. Rappaport Hovav and Levin 1998), we argue that the notion of 'result' is tied to the notion of Complex Event Structure, and in particular that the result type of a nominal is available if a state subevent is present in the Event Structure of the base verb. It has been observed, in fact, that activity verbs, lacking a state subevent, tend to yield corresponding ANs lacking a result meaning, although they can refer to abstract/concrete objects, as in the case of *administration*, which stands not only for the activity (*the administration of the company*) but also for the agent(s) of the activity (*the US administration*) and for the location where the activity takes place.

Such speculations on event semantics naturally lead to a related generalization: since the notion of (complex) Event Structure is crucially restricted to the V category (cf. Grimshaw 1990, Pustejovsky 1991, Levin & Rappaport Hovav 1998, a.o.), we derive that only nominals ob-

tained from verbs are potential bearers of this special pattern of polysemy. This explains why – notwithstanding the general consensus on the similarity of polysemy patterns in the morphologically simplex and complex lexicon (cf. Apresjan 1973) – only can deverbal nominals, hence morphologically complex nouns, refer to the abstract or concrete result of an event. A few English (dubious) counterexamples of morphologically simplex nouns are quoted in Pustejovsky (2005) (cf. *music, design*).

To conclude, we point out that more idiosyncratic meaning aspects of the base verb are also relevant for determining the chance of a result object interpretation, as extensively argued in the literature (Levin 1993, Ehrich and Rapp 2000, Osswald 2005, Melloni 2007). In particular, it has been noted that creation, re-description and modification predicates are often the base of corresponding polysemous nominals (cf. Bisetto and Melloni 2007). Nominals from creation and re-description verbs will be discussed in the remainder of the article.

### 3.2 On "results": Pustejovsky's account

Let us now address the issue of what types make up the complex type of a deverbal nominal. The relevant literature, in fact, introduces a set of semantic categories ranging from act(ion)/process/ event to state/result-state/result-object (an overview of the taxonomies of AN polysemy would clearly exceed the limits of the present article).

A notable formal account of nominal polysemy is given in Pustejovsky (1995), which is based on a categorization of the polysemy of process/result nominals as EVENT•EVENT or, more specifically, as PROCESS•(RESULT-)STATE. In particular, Pustejovsky claims that for *-ion* nominalizations in English, three interpretations are available, i.e. PROCESS, RESULT or PROCESS•RESULT – given by the dot object itself – respectively (specifically, the type cluster for PROCESS•RESULT dots is: PROCESS•RESULT_lcp = {PROCESS•RESULT, PROCESS, RESULT}):

(1) a. John fell from the ladder during the *con struction* of the roof frame (PROCESS)
  b. With the *construction* of the roof complete, John can start shingling (RESULT STATE)
  c. John's *construction* of the roof frame for the house was done yesterday (PROCESS•RESULT)

Specifically, Pustejovsky claims that for nominalizations which are derived from verbs of creation (e.g. *building*, *construction*, etc.) the result interpretation may correspond either to the individual which is created as a result of the initial process (as in 2 below), or to the state itself (Pustejovsky 1995:172).

(2) The *construction* is standing on the next street (result object)

The study of nominals in text confirms that the (result-)state interpretation is available to certain nominals (e.g. *isolation*, expressing the process and the state) but points out that it is generally not accessible to nominals obtained from verbs expressing events which put a new entity into existence. In other words, nominals such as *construction* or *translation*, i.e. obtained by creation and re-description predicates, have a complex event as part of their meaning but they are unable to refer to the resulting state of this event. For example, *construction* or *translation* cannot refer to the state of being constructed or translated, nor can they denote the state of existence of the construction and translation respectively. They can instead refer to the concrete or abstract objects obtained by the corresponding event, as we can see from the examples below:

(3) a. This *construction* is entirely made of wood.
    b. This *translation* is full of misused expressions.

Therefore, we argue that the notion of result - for creation and re-description nominals at least - hinges primarily on the concept of abstract or physical object yielded by the corresponding event instead of the resulting state. On these grounds, we claim that the event/result polysemy exhibited by these nominals should be classified primarily as EVENT•(RESULT-)OBJECT, rather than PROCESS•(RESULT-)STATE, where the 'OBJECT' type is the hyperonymic category of 'RESULT' intended as the causal by-product of an event.

### 3.3    More on result states

Apart from creation and re-description nominals as those discussed above, there are ANs derived from causative verbs, such as *obstruction* or *connection* that can instead refer to the process/event, to the result state, and to the created object (cf. Osswald 2005). So the question we address here is: what blocks the state interpretation for creation and re-description nominals like *construction* or *translation* and not for nominals like *obstruction*? We believe that a possible explanation lies in the peculiar Lexical Conceptual Structure (LCS) or Event Structure (ES) of the base verbs of the former class of nominals.

Accomplishments are usually analyzed as causative verbs, hence amenable to a complex event analysis like the one provided in (4), cf. RH&L (1998):[3]

(4) LCS of Causatives: [[x ACT <*MANNER*>] CAUSE [BECOME [ y <*STATE*>]]]

As argued in L&RH (1999:213), creation and re-description verbs, though traditionally analyzed as accomplishments, differ from "regular" accomplishment inasmuch as they undergo a semantic process of EVENT Co-IDENTIFICATION at the LCS level, initiated by the incrementality of the creation process. Co-identification of the constituent subevents in a complex event structure is defined as the relation that holds between subevents that are distinct in terms of conceptual structure but that can be represented as a single simple event in event structure terms if the following conditions are met:

a. The subevents must have the same location and must necessarily be temporally dependent (where temporal co-dependence does not only mean 'shared temporal extent', but crucially means that the subevents *unfold at the same rate*).

b. One subevent must have a property that serves to measure out that subevent in time, so that a change in value of the property reflects the temporal progress of the event. For events of creation, the relevant property is *the spatial extent of the created object*; this property is predicated of an entity that is necessarily a participant in both subevents.[4]

In the case of creation and re-description predicates such as *construct* and *translate*, co-identification is instantiated by what is generally acknowledged as the incremental theme (Dowty 1991) and in particular by the property of the

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[3] See, however, the distinction proposed in Van Valin 2005 between Accomplishments and Causative Accomplishments (Van Valin 2005:34).
[4] This proposal presupposes homomorphism between the temporal unfolding of the event and a scalar property or *degree* value. That is, different values along the scale of change map onto different portions of the event expressing the change (cf. Hay, Kennedy and Levin 1999).

incremental theme of measuring out the extent of the event through its physical extension.

In this view, since the two subevents are co-identified, there is no independent access to the BECOME subevent and to the resulting STATE either (cf. 4). Such inaccessibility to the state is inherited by the nominal, which is therefore incapable of yielding a result state interpretation.[5]

On the other hand, the relation between the event and the created object can be represented with the help of an enriched view of ES as proposed in Pustejovsky (2000), where it is assumed that creation predicates express the mode of opposition that the object (y) undergoes through the event, namely between /the object not existing/ and /the object existing/. In this view, creation predicates act as *gating functions* over their internal argument and introduce the initiation condition for this argument.

In fig. 1, we take inspiration from Pustejovsky (2000) and propose to retain a subeventual structure in the representation, which is crucial for capturing the opposition structure. We propose, however, to incorporate event co-identification (=) in order to account for the peculiar semantic structure of these verbs, i.e. the incrementality of the action.
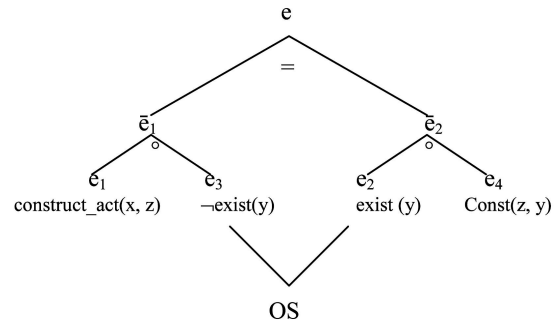


Fig. 1. Enriched ES of *construct*

This semantic modelling allows us to capture the peculiarity of creation verbs, in particular, it allows reference to the ¬existence predicate, corresponding to the e3 in the figure. From this representation it emerges that the result object (y), i.e. the construction, comes into existence (e2) throughout the unfolding of the constructing event (in other words, the constructing event is co-extensive with the coming into being of the object). Such opposition structure in the verb ES is inherited by the corresponding AN, and - we argue - is crucial for understanding the special nature of AN complex types and their inherent 'asymmetry', as we will see in section 5.

## 4 Formal modeling of ANs

In this section, we present a proposal of lexical representation for the complex types *construction* and *translation*, i.e., polysemous ANs derived from a creation and a re-description verb respectively.

### 4.1 Creation nominals

In fig. 2, we propose a GL-modeled lexical representation for *construction* that incorporates our considerations so far.

The Event Structure of *construction* integrates the Event Co-identification phenomenon, drawn from L&RH (1999): the *construction* process and the state of existence of the resulting object are necessarily co-identified, simplifying the complex ES in *construction*.[6]

Argument Structure contains three default arguments, namely the agent (d-ARG1), the artifact (the resulting object, d-ARG2) and the ma-

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[5] An anonymous reviewer argued that our explanation seems to predict that destruction and creation predicates should exhibit the same property, whereas certain contrasts show that they behave differently:

(i) The castle was entirely destroyed in 1812 and remained in this state for more than 120 years.
(ii) The castle was constructed in 1812 and ?? remained in this state for more than 120 years.

We argue that such contrast might be related to the difference between target and resultant states proposed by Parsons (1990, 234-5). Specifically, the relevant generalization would be the following: only can verbs that have a target state allow reference to it in contexts like (i). In this perspective, destruction predicates would be of the relevant type and allow reference to the (transitory) target state, while creation predicates would lack a target state in their semantics. Furthermore, we claim that the contrast might also lie in the fact that the most prominent result of creation acts is putting a new entity into existence and the salience of this concrete result presumably shadows other results that the event may bring about, such as the resultant state (cf. 3.2 above). In other words, the salience of the concrete result may shadow the resulting state. This does not hold, of course, for destruction predicates, where no new entity is created. Both these issues will be object of further research.

[6] As with *construct*, the enriched ES of *construction* encodes the mode of opposition (cf. fig. 1) but we will simplify the ES representation for the present discussion (cf. fig. 2).

terial out of which the artifact is created (d-ARG3). In the derivation process, the Result interpretation entirely "absorbs" (or semantically incorporates) d-ARG2, corresponding to the object position (y).

As for Qualia Structure, our representation in fig. 2 is in line with the representation proposed in classic GL for standard dot-objects like *book* and *door*, but it crucially deviates from EVENT•EVENT dots like *examination* and *arrival* discussed in Pustejovsky (1995). Classic dot-objects basically have a relational representation in the Formal Quale, consisting in a predicative structure defining the relation between the arguments / types in the complex. For the noun *construction*, we propose that a predicate specifying the causal relation between the event and the individual / physical object resulting from it is explicitly part of the makeup of the nouns's Formal role. In the Agentive value, we introduce the whole complex predicate *construct*, with the associated arguments. In this way, our representation is able to capture the polysemy between the *entire event* and the (*resulting*) *object* (cf. Pustejovsky 1995, where the relevant polysemy targets different portions of the same event, the *process* and the *state*, and is introduced by two different Qualia roles, i.e. the Agentive (*process*) and the Formal (*result state*)).
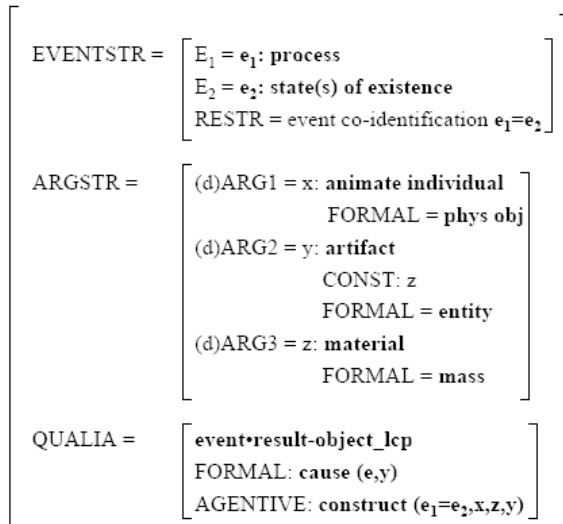


Fig. 2.       *construction*

## 4.2   Re-description nominals

The case of *construction* is not especially challenging for modeling purposes, since the types in the dot object corresponds to the Event argument and to a syntactic argument of the base verb. For most AN complex types, however, the situation is more complicated, since the result does not necessarily correspond to a syntactic position in the argument structure of the base verb. With the exception of nominals derived from creation verbs (e.g. *build*, *construct*, *create*, etc.), most result nominals do not introduce reference to an entity which corresponds to a syntactic argument of the base verb.

Let us consider *translation*, obtained by a re-description predicate, *translate*: the result of the event (i.e. *translation* as an informational object), although temporally and causally dependent on its accomplishment, is not expressed by a dedicated DP in the syntax. However, this piece of information, we claim, must be codified somehow in the semantic structure of the base verb and the derived nominal. We propose that it is encoded in the form of a semantic participant (or "hidden argument", cf. Badia and Saurí 2001) in the argument structure of the predicate *translate* and that it is inherited by the derived nominal *translation* (see Melloni 2006, 2007 and Ježek 2009 for proposals along these lines).

Let us clarify this point by introducing the partially different modelling we propose for *translate* and *translation* in order to accommodate these facts. Because of the presence of an additional participant in *translate* when compared with *construct*, we propose that the ES of *translate* in fig. 3. encodes richer information about the end point. In particular, we propose that 'John translated the book' encodes two end states, instead of one: the state of the book (y) being (fully) translated (e2) and the state of existence (e4) of the translation (z).
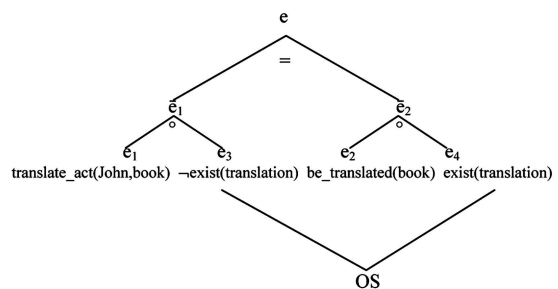


Fig. 3       Enriched ES of *translate*[7]

[7] An anonymous reviewer pointed out that the event structures of creation and re-description predicates differ w.r.t. 'e$_4$' since there is no direct reference to the components of the translation event in fig. 3 (e.g. the language from/to which a translation applies). We answer this comment quoting Pustejovsky (2000:

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As with *construct*, the opposition structure in the enriched ES of *translate* concerns the /¬existence/ vs /existence/ predicates of an internal argument, which remains however unexpressed ('hidden') in the syntax of *translate*.

Concerning the derived nominal *translation* in fig. 4, the hidden argument (z), identifying the result of the event, is not only integrated in the Qualia Structure (as an argument to the value of the Agentive Quale) but also surfaces at the level of Argument Structure of the complex type. Argument Structure in GL is primarily conceived as a semantic layer of representation and although the hidden argument never surfaces in the verb syntax, it is relevant for the interpretation of both verbal and, especially, nominal semantics, where it represents the result type in the dot object (as indicated in the Formal Quale, introducing a causative relation between the Event and the Result, z). The result sense of *translation* may thus be explained through binding of the hidden argument (z).
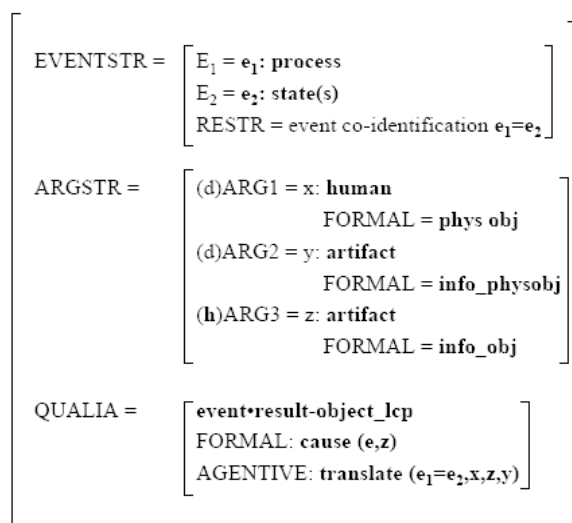
$$
\begin{bmatrix}
\text{EVENTSTR} = \begin{bmatrix} E_1 = e_1\text{: process} \\ E_2 = e_2\text{: state(s)} \\ \text{RESTR} = \text{event co-identification } e_1 = e_2 \end{bmatrix} \\
\\
\text{ARGSTR} = \begin{bmatrix} \text{(d)ARG1} = x\text{: human} \\ \qquad \text{FORMAL} = \text{phys obj} \\ \text{(d)ARG2} = y\text{: artifact} \\ \qquad \text{FORMAL} = \text{info\_physobj} \\ \text{(h)ARG3} = z\text{: artifact} \\ \qquad \text{FORMAL} = \text{info\_obj} \end{bmatrix} \\
\\
\text{QUALIA} = \begin{bmatrix} \text{event}\bullet\text{result-object\_lcp} \\ \text{FORMAL: cause (e,z)} \\ \text{AGENTIVE: translate } (e_1 = e_2, x, z, y) \end{bmatrix}
\end{bmatrix}
$$

Fig. 4      *translation*

## 5 Asymmetry in the E•R complex type

Before discussing the question of co-predication in some detail, we would like to further elaborate on the relation between the types in AN dot objects.

From a theoretical viewpoint, the special nature of AN complex types lies in the asymmetry – at the ontological level – between the types making up the complex type.[8] Not only are events and (result-)objects radically distinct ontological categories, but the result-object type is temporally and causally dependent on the event type since the performance of the event is the pre-condition for the (coming into) existence of the result.[9]

In this respect, it is worth stressing that, while there are events that do not yield results (intended as the causal concrete or abstract by-product of the action), and accordingly there are unambiguous event-denoting nominals (cf. *annihilation*), the reverse situation does not hold. That is, there are no results without a causing event, and unambiguous result-denoting nominals are idiomatized/lexicalized.[10] Such asymmetry is missing in standard cases of dot objects, even in EVENT•PHYS.OBJECT dot types, such as *lunch*, where the senses in the complex type are mutually interdependent: the food is what is consumed during the event and it is not its result.

We argue that the troubles with co-predication usually attested with ANs are the direct indication of such asymmetry and can be explained in relation to different syntactic and semantic requirements of the event and result types.

## 6 Co-predication issues

To conclude, we touch briefly the issue of co-predication with ANs. Typically, one of the main diagnostics for identifying dot objects is their felicitous use in co-predication contexts. What we know from the existing literature, however, is that co-predication with event/result nominals

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459) w.r.t. the ES of *construct* (cf. fig. 1 in our paper): "It should be noted that the constitution relation holding between the material and the object being created is expressed in the qualia structure of the arguments themselves, and not directly in the event structure. Therefore, Const(z; y) actually holds of the entire spanning event and could be effectively factored out."

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[8] As we clarified in (3), we assume that the causal or complex structure in the deverbal nominal is 'inherited' from the verb event structure.

[9] This claim would find empirical support in the absence of co-predication contexts where the result reading is referred to before the event reading. Co-predication is however fairly infrequent with ANs and subject to specific constraints (cf. section 7).

[10] At times, events yield results but derived nominals might be unable to refer to them, for instance because of the aspectualizing nature of the suffix (cf. English -*ing* nominalizations such as *burning* – discussed a.o. in Asher 1993 and Pustejovsky 1995).

often leads to semantic anomaly.[11] In fact, while standard dot objects may easily appear in co-predication contexts (5), event/result nominals apparently tend to avoid co-predication or to accept it only at specific syntactic and semantic conditions, including temporal disjunction between the types, omission of the internal argument, insertion of a relative pronoun, etc. (cf. Jacquey 2001 for a detailed analysis of French nominals in co-predication contexts).

(5) The *lunch* was delicious but took forever.
(6) The *translation* of this book is perfect now but took forever.
(7) #The *construction* of this house is huge but took forever.

A general remark on co-predication should however ground any discussion on this intricate issue: first, co-predications may involve dot-objects but also artifactuals (even if for artifactuals it is possible only under coercive contexts, as in 8 and 9) and, even more importantly, semantic anomaly with certain co-predications does not imply absence of inherent polysemy *per se*, insofar as discourse factors may also play a role in facilitating or blocking a specific type combination (cf. 10).

(8) Arnold's *cigar* is Cuban and lasted the whole afternoon. (Asher and Pustejovsky 2006)
(9) She opened the *wine* and poured some into the glass. (Pustejovsky and Jezek 2008)
(10) #The *newspaper* was founded in 1878 and weighs 5 lbs. (Asher and Pustejovsky 2006)

W.r.t. event/result nominals, we claim that (partial) failure of co-predication is particularly expected because of the semantic asymmetry within the types in the complex (cf. section 5): the result type is the causal by-product of the event type and as such it is dependent on the event type, but not viceversa. This asymmetry seems to challenge the chance of co-predication especially in case of coordination structures, which suggest a parallel status for the EVENT and RESULT types (cf. Brandtner 2009).

Moreover, we argue that infelicitous co-predication heavily depends on the *syntactic* incompatibility between the senses in context because, whilst event nominals usually retain verb argument structure and require the projection of

an argument (generally, the internal one), result nominals may "absorb" the internal argument (cf. *construction*) and consequently block its projection (cf. example 7).

Finally, along with Copestake and Briscoe (1995), we claim that while acceptable co-predications usually imply the existence of a single structure, it does not follow that the converse is true, since a semantic/pragmatic principle of cohesion may be at play, which restricts the acceptability of certain sense combinations in context (on the relevance of the notion of salience wrt. co-predication cf. also Brandtner 2009).

Concerning this point, the corpus query system that we use in our empirical investigation (cf. Kilgarriff et al. 2004) turns out to be particularly useful for the identification of the syntactic and semantic contexts where felicitous co-predications obtain and for the validation of our hypothesis that the inherent asymmetric structure of event-result nominals constitutes a major constraint on their co-predication. In the next final section, we present some co-predication data that we extracted from texts, and analyze them taking these insights into account.

# 7    Co-predication data

In our empirical investigation, we extract co-predication contexts from the ITWaC corpus (Italian Web as Corpus – cf. Baroni and Kilgarriff 2006) with the help of regular expressions that look for the typical linguistic contexts in which co-predications may apply (cf. Copestake and Briscoe 1995). In particular, we look for contexts in which two *selectors* appear (either adjectival or verbal), that are contradictory in type specification and pick out different meanings of the same nominal[12]. Our targeted data consists of coordination and subordination structures with conflicting verbs and/or adjectives. The overall aim is to identify the factors that facilitate event/result co-predication, which we assume is constrained by the inherent asymmetry between the two types. Our analysis takes a specific point of view, namely, instead of speculating about impossible co-predications, we look for co-predications that are effectively attested, and analyze their structural and pragmatic properties, in order to induce from the data the general factors that allow event-result co-predication to take place, instead of concentrating primarily

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[11] Our corpus investigation also showed that co-predication contexts for ANs are infrequent.

[12] On the formal notion of "selector" in predication environments, cf. Rumshisky 2007.

on the constraints. In this view, our methodology is theory-informed but it is intended as a bottom-up methodology.

Let us now look in detail at three co-predication contexts for It. creation nominal *costruzione* 'construction':

(11) La costruzione, che *si protrasse*$_E$ fino al XVII secolo, *rimane un'importante testimonianza*$_R$ della geniale tematica del Palladio.
'The construction, which continued till the XVII century, represents an important evidence of Palladio's ingenious artwork'

In (11), *protrarre* 'continue' selects the Event type, while *rimanere un'importante testimonianza* 'represent important evidence' selects the Result type[13]. We claim that co-predication is felicitous in this context because of three facilitating factors: a) the E-type selector is introduced in the relative clause, b) there is temporal disjunction between the E and the R type, namely Past for the E-type selecting predicate, Present for the R type selecting predicate, and c) the internal argument is omitted (the result interpretation would be blocked in case of internal argument projection).

(12) Lungo le strade sulle quali sono indicati i punti di vista *devono essere vietate*$_E$ costruzioni che *impediscano*$_R$ le visuali del paesaggio.
'Along the roads where lookout points are indicated, one must prohibit constructions that block the visuals of the landscape'

In (12), *devono essere vietate* lit. 'must be prohibited' selects the Event type while *impediscano* 'block' selects the Result type. As in (11) we argue that co-predication in (12) is felicitous because the R-type selector is introduced in the relative clause and the internal argument of the Event reading is omitted. On the other hand, temporal disjunction between the types that make

up the complex does not seem to play a role in this context.

(13) Ed *è in fase di completamento*$_E$ un'ulteriore costruzione che *permetterà*$_R$ l'allevamento di animali da cortile.
'And an additional construction is being completed that will allow the breeding of courtyard animals'

In (13), *è in fase di completamento* 'is being completed' selects the Event type while *permetterà* 'will allow' selects the Result type. Again, the R-type selector is introduced in the relative clause and the internal argument is omitted. Furthermore, there is temporal disjunction between the types, supporting our hypothesis that the R type is temporally dependent on the E type.

As a final remark, it should be noted that the selectional properties of the verbal and adjectival collocates are not always sufficient cues of the likely type selection, and some contexts are difficult to classify. For example, it is not clear if the aspectual predicate *portare a termine* 'to accomplish' in (14) merely selects the Event reading of the dot object *costruzione* or if instead coerces the Result type of this noun (as suggested by the parallelism with the concrete noun *chiesa*) by exploiting the value of the Agentive role (*costruire*).

(14) Oltre la chiesa *portò a termine* anche la costruzione che doveva servire alle scuole.
'Beside the church, he also accomplished the construction which was meant to serve to the schools'

## 8 Conclusions

This research, though focused on a class of nouns deeply studied in the literature, clarifies the nature of an intriguing pattern of inherent polysemy. The event/result polysemy is in fact widely attested in deverbal ANs, but peculiar when compared with standard cases of dot objects on theoretical and empirical grounds.

Specifically, we have proposed that such polysemy is formally codified at the level of Event and Qualia Structures of the base verbs and corresponding nominals, while the relation between the senses is identified as 'causal' and is specified in the LCS of the base verb (hence inherited by the nominal). However, event/result nouns are crucially different from standard complex types, since there is no mutual interdependence be-

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[13] Note that *rimanere un'importante testimonianza* represents a copulative structure, insofar as the verb *rimanere* behaves as a copula in this context (cf. *essere un'importante testimonianza* 'be an important evidence'). Although we are aware that copulative structures constitute a controversial case of co-predication, we opted to include such cases in our data insofar as we intend to provide a taxonomy of all potential co-predication types that emerge from the empirical investigation, on which further theoretical observations can be made.

tween the types but the event sense is primary with respect to the result sense. Troubles with co-predication are the direct indication of such asymmetry and can be explained in relation to different syntactic and semantic requirements of the event and result types.

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