

# Why Can't We Wipe the Slate Clean? A Lexical-Syntactic Approach to Resultative Constructions\*

Jaume Mateu Fontanals

Universitat Autònoma de Barcelona. Departament de Filologia Catalana  
08193 Bellaterra (Barcelona). Spain  
Jaume.Mateu@uab.es

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## Abstract

This paper provides a lexical-syntactic account (Hale & Keyser (1993, 1999)) of why Romance languages do not have resultative sentences like *John hammered the metal flat* or *the dog barked the chickens awake*. It is argued that there is no principled way to account for this «gap» in terms of semantic and/or aspectual operations available in English but not in Romance. Rather, it is shown that the parametric issue involved in the resultative construction must be related to one empirical fact: the morphological properties associated with the lexical-syntactic element corresponding to the directional relation are not the same in English as in Romance. It is claimed that the parameterization of Talmy's (1985) 'conflation processes', of which the resultative construction is not but a particular instantiation, can be given explanatory power only when they are translated into lexical-syntactic terms. It is argued that the relevant 'lexical subordination process' involved in resultative constructions is carried out by means of a syntactic operation rather than a semantic one. This operation is shown to be possible in English because of its 'satellite-framed' nature (Talmy (1991)). By contrast, the 'verb-framed' nature of Romance languages prevents them from carrying out such an operation.

On the other hand, a crucial distinction between true/non-adverbial resultatives (e.g., *John hammered the metal flat*) vs. false/adverbial resultatives (e.g., *John cut the meat thin*) must be drawn. Both English and Romance have false/adverbial resultatives, but only English has true/non-adverbial resultatives. Parametric variation in the lexical-syntactic domain appears to be only relevant to true resultatives.

**Key words:** resultative constructions, argument structure, lexical syntax, conflation processes.

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**Resum.** Why Can't We Wipe the Slate Clean? *Una anàlisi lexicosintàctica de les construccions resultatives*

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En aquest article proposem una explicació lexicosintàctica (Hale i Keyser (1993, 1999)) de per què les llengües romàniques no tenen construccions resultatives complexes del tipus *John hammered the metal flat* (lit. 'En Joan va martellejar el metall pla') o *The dog barked the chickens awake* (lit. 'El gos va bordar els pollastres desperts'). Es defensa que aquesta variació entre l'anglès i les llengües romàniques té a veure amb les diferents propietats morfològiques que aquestes llengües assignen a l'element lexicosintàctic que expressa 'direccionalitat' o 'trajecte'. Proposem que es pot donar poder explicatiu a la parametrització dels processos de fusió de Talmy (1985), dels que la construcció resultativa no n'és més que un exemple, només si aquests s'analitzen en termes lexicosintàctics. Es defensa que el 'procés de subordinació lèxica' implicat en les construccions resultatives complexes és una operació sintàctica més que no pas semàntica. Aquesta operació és possible en anglès pel seu tipus d'emmarcament per satèl·lit' [satellite-frame] (Talmy (1991)). Per contra, el tipus d'emmarcament en el verb' [verb-frame] de les llengües romàniques és incompatible amb l'aplicació d'aquesta operació.

Per altra banda, cal distingir les veritables construccions resultatives (e.g., *John hammered the metal flat*) de les que tenen una interpretació «adverbial» (e.g., *John cut the meat thin*). Tant l'anglès com les llengües romàniques tenen aquestes segones construccions, però només l'anglès en té de les primeres. Per tant, la variació paramètrica en el domini lexicosintàctic només és rellevant pel que fa a les primeres, i.e., les construccions resultatives complexes.

**Paraules clau:** construccions resultatives, estructura argumental, sintaxi lèxica, processos de fusió.

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## 1. Introduction

The main goal of this paper is to provide a lexical-syntactic explanation of the parametric variation involved in so-called «resultative constructions», which are exemplified in (1)-(3).<sup>1</sup>

- (1) *Transitive resultatives*
- The waiter wiped the dishes dry.
  - John hammered the metal flat.
  - John pushed the door open.

1. We follow Carrier & Randall (1992) in our preliminary classification of resultatives in (1-3).

- (2) *Unergative resultatives*
- The dog barked the chickens awake.
  - The sopranos sang us sleepy.
  - Beth shouted herself hoarse.
- (3) *Unaccusative resultatives*
- The river froze solid.
  - The toast burned black.
  - The gate swung shut.

In particular, we will try to explain why these constructions are possible in Germanic languages such as English or Dutch, but not in Romance languages such as Catalan or Spanish: the Catalan examples in (4), which correspond to the examples in (1a), (2a), and (3a), are ungrammatical.

- (4) a. \*El cambrer fregà els plats secs. (Catalan)  
 The waiter wiped the dishes dry-pl  
 'The waiter wiped the dishes dry.'
- b. \*El gos bordà els pollastres desperts.  
 The dog barked the chickens awake-pl  
 'The dog barked the chickend awake.'
- c. \*El riu es congelà sòlid.  
 The river ES(reflexive pr.) froze solid-sg  
 'The river froze solid.'

Unfortunately, there is some disagreement in the literature on resultatives as to whether resultative constructions exist in Romance or not. For example, Green (1973), Talmy (1985), Merlo (1989) or Snyder (1995), among others, pointed out that these constructions do not exist in Romance, whereas Napoli (1992: 88) concluded that «it appears that Romance languages in general exhibit resultatives». Quite clearly, what is at issue here is what is meant by *resultative construction* and *resultative predicate*. Once the proper distinctions are drawn, it will be shown that there is a very real parametric issue involved in the present constructions, by virtue of which Romance languages in general behave differently from Germanic languages.

Our paper is organized as follows. In Section 2, we show that the crosslinguistic variation involved in the resultative construction cannot be accounted for by semantic approaches in a principled way. Section 3 sketches out Hale & Keyser's (1998, 1999) syntactic theory of argument structure, on which our analysis of resultatives is based. An important modification of Hale & Keyser's (1998) basic argument structure types is argued to be motivated on principled grounds. As a result, the homomorphic nature between the syntax and semantics of argument structure will be seen to emerge in quite a natural way. In Section 4, Talmy's (1985, 1991) descriptive account of so-called conflation processes, of which the resultative is not but a particular instantiation, is translated into the more explanatory terms provided by Hale & Keyser's theory of Lexical Syntax. Moreover, a crucial distinction between true/non-adverbial resultatives (e.g., *John hammered the metal flat*) vs. false/adver-

bial resultatives (e.g., *John cut the meat thin*) must be drawn (Washio (1997)). Both English and Catalan have false/adverbial resultatives but only English has true/non-adverbial resultatives. Parametric variation in the lexical syntactic domain is argued to be only relevant to true resultatives. Section 5 summarizes the main conclusions.

## 2. Semanticocentric Approaches to the Resultative Construction

In this section we will show that there is no principled way to account for the differences noted between English and Catalan (cf. (1-4)) in terms of semantic or aspectual operations available in the former language, but not in the latter.

To start with, we mention Levin & Rapoport's (1988: 282) pioneering analysis of the lexical subordination operation in (4b), a more sophisticated account of which can also be found in Jackendoff's (1990) lexicalist analysis. According to Levin & Rapoport, this operation can be understood as a lexical rule whose effect is that of extending the basic L(exical) C(onceptual) S(tructure) of a verb into a derived LCS by means of a semantic operator (cf. *BY* in (4b)).

- (4) a. Evelyn wiped the dishes.  
       wipe<sub>1</sub>: [x 'wipe' y]
- b. Evelyn wiped the dishes dry.  
       wipe<sub>2</sub>: [x CAUSE [ y BECOME (AT) z] BY [x 'wipe' y]]

Basically, our main objection to Levin & Rapoport's proposal runs as follows: which theoretical and explanatory status can be attributed to their claim that there are LCS operations available in English but not in Romance? As it stands, Levin & Rapoport's mere claim that a LCS operation called lexical subordination exists in English but not in Romance, lacks a principled explanation.

The same criticism can also be argued to hold for non-syntactic approaches to the resultative construction like Tenny's (1994) aspectual analysis depicted in (5). According to Tenny (1994: 200), «lexical subordination is actually an operation over aspectual structure. It is an aspectual operation in which the MEASURE aspectual role is added to an empty aspectual grid (...) Taking the simple basic meaning of the verb and extending its sense by importing a result component into the verb's meaning amounts to an operation over aspectual structure».

- (5) a. Evelyn wiped the dishes.  
       wipe<sub>1</sub>:           Aspectual structure: [ ]
- b. Evelyn wiped the dishes dry.  
       wipe<sub>2</sub>:           Aspectual structure: [MEASURE]
- c. wipe<sub>1</sub> --- → wipe<sub>2</sub>  
       Aspectual structure: [ ] --- → [MEASURE]

Tenny appears to assume that Romance languages do not make use of the aspectual operation informally represented in (5c). Unfortunately, a more explanatory account on the basis of which such an assumption is made is not pursued.

Similarly, the same problem arises when Pustejovsky's (1991) event-type shifting analysis is taken into account. According to Pustejovsky (1991: 64), «the resultative construction involves what appears to be a systematic event-type shifting from processes to transitions» (cf. (6)). He points out that the resultative construction is not but an instantiation of a productive strategy of converting activities (i.e., «processes») into accomplishments (i.e., «transitions»). The accomplishment reading in (6b) emerges as a result of «adding» [*sic*] the resultative phrase into the basic process verb.

- (6) a. Mary hammered the metal (hammer process)  
 b. Mary hammered the metal flat (hammer transition)

Despite its intuitive plausibility, Pustejovsky's analysis also runs into problems when language variation is taken into account. Once again, the immediate question to be solved is why some languages (e.g., Romance) do not make use of this event-type shift strategy. A principled explanation of this non-trivial fact is not addressed by Pustejovsky (1991) nor by their followers (e.g., van Hout (1996)).

Our main criticism to the presently reviewed semantic and aspectual approaches to the resultative construction can be formulated in the following terms: why is it the case that lexical subordination or event-type shifting appear to be semantic or aspectual operations available in English, but not in Romance? We are fully convinced that a principled answer cannot be given to such a question precisely because its very formulation is clearly inappropriate as well. To be sure, we agree with their claiming that the difference is to be found in the lexicon. Otherwise, where could it be found? This notwithstanding, we will show that the above-mentioned proposals have clearly missed the point when dealing with both the specific nature of the lexical rule called lexical subordination, and its range of operation. Quite crucially, we will show that both must be defined within the lexical-syntactic domain (Hale & Keyser (1993, 1998)). This conclusion should be taken as fairly natural. It is widely acknowledged that parametric variation cannot be defined in purely semantic or aspectual terms. Accordingly, we will show that the relevant explanation of the parametric issue involved in resultative constructions has nothing to do with the positive or negative application of some *ad hoc* operations over the Lexical Conceptual Structure, the Aspectual Structure, or the Event Structure, but with one empirical fact: i.e., the morphological properties associated to the lexical-syntactic element corresponding to the directional relation are not the same in English as in Romance (cf. Snyder (1995) and Klipple (1997) for related discussion).<sup>2</sup>

2. One important caveat is in order here: obviously, we do not intend to reduce the importance of semantics by adopting a syntactic approach. Our lexical-syntactic account should not be regarded as incompatible with Jackendoff's (1990) or Goldberg's (1995) works on the semantic restrictions concerning the resultative construction(s). We have put them aside in the present paper, because what we are mostly concerned with here is the status of the lexical subordination rule, its range of operation, and the parametric variation involved in the resultative construction.

Before analyzing the relevant lexical parameter at issue, it will be useful to sketch out the fundamentals of Hale & Keyser's (1998, 1999) theory of argument structure, which our analysis of resultatives will be argued to depend on. Quite crucially, an important modification/reduction of their basic argument structure combinations will be shown to be motivated by our unified approach to telic path of motion constructions (e.g., *The boy danced into the room*) and adjectival resultative constructions (e.g., *The girl wiped the table clean*).

### 3. The Syntax of Argument Structure

#### 3.1. Hale & Keyser's (1998, 1999) Theory of Argument Structure

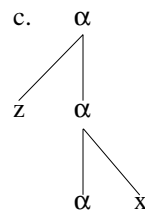
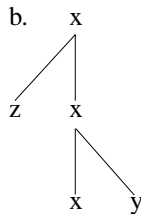
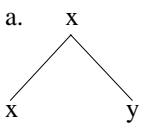
Argument structure is conceived of by Hale & Keyser (1999: 453) as «the syntactic configuration projected by a lexical item. Argument structure is the system of structural relations holding between heads (nuclei) and the arguments linked to them, as part of their entries in the lexicon. Although a lexical entry is much more than this, of course, argument structure in the sense intended here is precisely this and nothing more».

Their main assumptions, expressed informally, are those embodied in (7) (Hale & Keyser (1999: 454)).

- (7) Argument structure is defined in reference to two possible relations between a head and its arguments, namely, the head-complement relation and the head-specifier relation.

A given head (i.e.,  $x$  in (8)) may enter into the following structural combinations in (8): «these are its argument structure properties, and its syntactic behavior is determined by these properties» (Hale & Keyser (1999: 455)).

- (8) Head ( $x$ ); complement ( $y$  of  $x$ ), predicate ( $x$  of  $z$ )



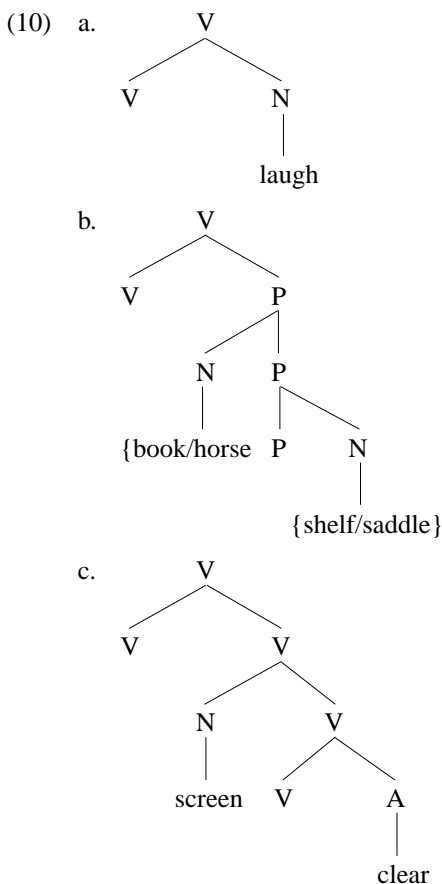
d.  $x$

According to Hale & Keyser, the prototypical or unmarked morphosyntactic realizations in English of the syntactic heads in (8) (i.e., the  $x$ 's) are the following:  $V$  in (8a),  $P$  in (8b),  $A$  in (8c), and  $N$  in (8d).

The main empirical domain on which Hale & Keyser's hypotheses are currently being tested includes denominal verbs (so-called unergative verbs like *laugh* (cf. (9a)), transitive locative verbs like *shelve* (cf. (9b)), or locatum verbs like *saddle* (cf. (9c))), and deadjectival verbs (e.g., *clear* (cf. (9d))).

- (9) a. John laughed.  
 b. John shelved the book.  
 c. John saddled the horse.  
 d. John cleared the screen.

Unergative verbs are argued to be transitive since they involve merging a noun with a verbal head (cf. (8a)), this resulting in (10a); both locative and locatum verbs involve merging the structural combination in (8b) into that of (8a):<sup>3</sup> cf. (10b). Finally, transitive deadjectival verbs also involve two structural combinations, i.e., that in (8c) is merged into that of (8a): cf. (10c).



3. Hale & Keyser propose the same argument structure configuration for both locative and locatum verbs. The main difference between them is a semantic one: while the P involved in the argument structure of (9b) is a terminal coincidence relation (cf. *John put the book onto the shelf*), the P involved in the argument structure of (9c) is a central coincidence relation (cf. *John provided the horse with a saddle*).

Locative and locatum verbs are always transitive (*\*the book shelved/ \*the horse saddled*}), because their inner P-projection cannot occur as an autonomous predicate. By contrast, deadjectival verbs can be intransitive (i.e., unaccusative: *the screen cleared*), since their inner V-projection can occur as an autonomous predicate.<sup>4</sup>

Furthermore, as justified in Hale & Keyser (1993), the external argument of transitive constructions (unergatives included) is said to be truly external to the argument structure configuration. It will appear as the specifier of a functional projection in s(entential)-syntax (cf. also Kratzer (1996)).

Both denominal and deadjectival verbs implicate a process of conflation, essentially an operation that copies a full phonological matrix into an empty one, this operation being carried out in a strictly local configuration: i.e., in a head-complement one.<sup>5</sup> If Conflation can be argued to be concomitant of Merge (Hale & Keyser (1999)), the argument structures in (10) turn out to be quite abstract since they have been depicted as abstracted away from the conflation processes involved in the examples in (9). Applying the conflation operation to (10a) involves copying the full phonological matrix of the noun *laugh* into the empty one corresponding to the verb. Applying it to (10b) involves two steps: the full phonological matrix of the noun {*shelf/saddle*} is first copied into the empty one corresponding to the preposition; since the phonological matrix corresponding to the verb is also empty, the conflation applies again from the saturated phonological matrix of the preposition to the unsaturated matrix of the verb. Finally, applying the conflation process to (10c) involves two steps as well: the full phonological matrix of the adjective *clear* is first copied into the empty one corresponding to the internal verb; since the phonological matrix corresponding to the external verb is also empty, the conflation applies again from the saturated phonological matrix of the inner verb to the unsaturated matrix of the external verb.

### 3.2. *On the Non-primitive Status of Argument Structure Properties of Adjectives*

In this subsection, we will try to show that the structural combination in (8c) does not have a primitive status in the syntactic theory of argument structure. In particular, our claim is that the lexical head *x* in (8c) is not a primitive element of Lexical Syntax, as in Hale & Keyser's approach, but a composite unit: the lexical head *x* in (8c), whose unmarked morphosyntactic realization in English is the category Adjective (A), can be argued to be decomposed into two more primitive lexical-syntactic elements:<sup>6</sup> we claim that A involves the conflation of a non-relational element like that expressed by the lexical head *y* in (8b) into a relational element like that expressed by the lexical head *x* in (8b). That is to say, the structural combination in (8b) allows us to account for the argument structure properties of As as

4. Crucially, note it can be associated with tense morphology.

5. The conflation from a specifier is banned (cf. Hale & Keyser (1993)).

6. At first glance, this hypothesis should not be surprising at all: the fact that the A category is missing in some languages is coherent with its secondary status.



well. Accordingly, the argument structure of the small clause involved in two sentences like those in (11a-b) turns out to be the same: cf. (11c). Quite crucially, we claim that the conflation of *y* into *x* involved in A accounts for both its relational or predicative character, which A shares with P, and its nominal properties, which A shares with N.<sup>7</sup>

- (11) a. is [*the cat* [*in the room*]]  
 b. is [*the cat* [*happy*]]  
 c. is [<sub>*x*</sub> z [<sub>*x*</sub> *x y*]]

Besides these morphosyntactic facts, the decomposition of adjectives into a relational element plus a non-relational element appears to be quite natural from a conceptual perspective as well. For example, from a Jackendovian perspective, the Conceptual Structure assigned to (12a) can be argued to contain a relational element introducing an abstract Place (AT). In fact, this extension is clearly expected under the so-called Thematic Relations Hypothesis (Gruber (1965), Jackendoff (1983, 1990), according to which the same conceptual functions we use when dealing with physical space (e.g., BE, GO, AT, TO, etc.) can also be applied to our conception of abstract space.<sup>8</sup>

- (12) a. The door is open.  
 b. [<sub>State</sub> BE [<sub>Thing</sub> DOOR], [<sub>Place</sub> AT [<sub>Property</sub> OPEN]]]

More interestingly for the purposes of our present paper, the above-mentioned parallelism between physical and abstract spatial domains receives in turn further empirical support when considering the crosslinguistic morphosyntactic properties of resultative predicates: e.g., not only do Romance languages lack adjectival resultative constructions like the one in (13a), but prepositional ones like the one in (13b) are missing in these languages as well.<sup>9</sup>

- (13) a. Joe kicked the door open.  
 a'. \*El Joe colpejà la porta oberta. (Catalan)  
 The Joe kick-past-3rd.sing the door open  
 b. Joe kicked the dog into the bathroom.  
 b'. \*El Joe colpejà el gos a dins el bany.  
 The Joe kick-past-3rd.sing the dog inside the bathroom

As shown below in Section 4, the «reduction» of the syntactic configuration in (8c) to the one in (8b) will be empirically motivated by our crosslin-

7. For example, the fact that languages like Latin mark As with morphological case can be taken as empirical evidence in favor of their nominal nature.

8. See Jackendoff (1990: 250) for a localistic analysis of the LCS corresponding to the {causative/inchoative} verb *open*.

9. (13a') and (13b') are grammatical on the following irrelevant readings: (13a') is grammatical if A is interpreted not as resultative but as attributive: i.e., 'the open door'; (13b') is grammatical if the PP has a locative, non-directional reading: i.e., 'the kicking took place inside the bathroom'.

guistic analysis of resultatives: the lexical-syntactic element corresponding to the Path relation involved in both prepositional and adjectival resultatives will be argued to be the same, this being explicit in the former, but covert in the latter. If we are willing to maintain that the relevant explanation accounting for the data in (13) is basically morphosyntactic rather than purely semantic, it will be seen inevitable to decompose adjectival resultatives in two different lexical syntactic elements: the parameter must have access to the relational element incorporated in *As*, i.e., that corresponding to the Path relation. That is to say, to the extent that both prepositional and adjectival resultatives are treated in a uniform way as far as the lexical parameter is concerned, the decomposition of adjectival resultative predicates into two lexical-syntactic elements appears to be justified.<sup>10</sup>

### 3.3. *Argument Structure Meets Homomorphism*

We want to argue that the reduction of (8c) to (8b) is not only empirically supported, as we have pointed out in the latter section, but is welcome from a theoretical perspective as well. The purpose of the present subsection is to show that this reduction strengthens the theoretically desirable claim that there is a strong homomorphism between the syntax and semantics of argument structure.<sup>11</sup> Such a proposal could be argued to depart from Hale & Keyser's (1999: 465) claim: «the fact that structures can carry meaning is orthogonal to our program», but we think that this is a prompt conclusion. In fact, our present proposal partakes of both Hale & Keyser's (1993) paper, where certain meanings were associated with certain structures, and their (1999) paper, where a refinement of the basic argument structure types is presented. Quite importantly, we will argue that the reduction proposed above allows us to synthesize these two compatible proposals in quite an

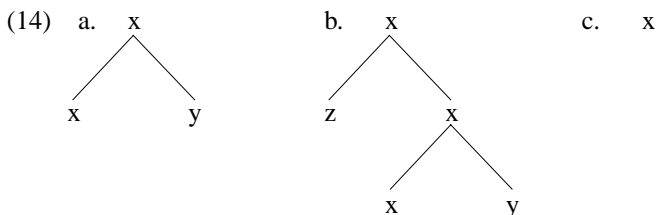
10. Quite probably, Hale & Keyser would not accept such a modification or reduction of their argument structure types, since the causative/inchoative alternation is presented by them as an important point that forces them to maintain the structural distinction between the denominal verbs that involve Merge of (8b) into (8a) and the deadjectival verbs that involve Merge of (8c) into (8a). According to them, this structural distinction explains why the former are always transitive, whereas the latter can have an intransitive variant (the  $\alpha$  verbal head in (8c) being then inflected with Tense).

However, as Kiparsky (1997) has shown, such a generalization is not well-grounded. According to him, denominal verbs *can* participate in the causative/inchoative alternation if they denote events that can proceed without an explicit animate agent: e.g., cf. *pile (up)*, *land*, *carbonize*, *oxidize*, etc. On the other hand, there are deadjectival verbs that can *not* participate in such an alternation: e.g., cf. *legalize*, *visualize*, etc.

That is to say, the relevant conclusion appears to be the following: the fact that denominal verbs do not enter into the causative/inchoative alternation is not due to a purely structural source, as Hale & Keyser propose, but to the fact that they often involve an animate agent. *Rebus sic stantibus*, the main objection that Hale & Keyser could entertain with respect to our eliminating the apparently basic combination of (8c) vanishes.

11. See Bouchard (1995), Baker (1997), and Mateu (1999) for discussion on the homomorphic nature between the syntactic and semantic structures.

elegant and simple way. Given this reduction, the basic, irreducible argument structure types turn out to be those in (14).



We claim that the reduction of (8) to (14) allows homomorphism to show up in the terms expressed in (15): given (15), the relational semantics of argument structure can be argued to be directly read off from its corresponding relational syntax (Mateu (2000)).

- (15) a. The lexical head  $x$  in the syntactic configuration in (14a) is always to be associated to an *Eventive relation*.  
 b. The lexical head  $x$  in the syntactic configuration in (14b) is always to be associated to a *Spatial relation*.  
 c. The lexical head  $x$  in the syntactic configuration in (14c) is always to be associated to a *Non-relational element*.

The Eventive relation which is uniformly associated with the  $x$  in (14a) can be instantiated as two different semantic relations: If there is an external argument in the specifier position of the relevant  $F$ (unctional) projection (e.g.,  $v$  in Chomsky (1995) or Voice in Kratzer (1996)), the Eventive relation will be instantiated as a Source relation, the external argument being interpreted as Originator (cf. Borer (1994) and Mateu (1999)). If there is no external argument, the Eventive relation will be instantiated as a Transitional relation (cf. Mateu (1999)), which in turn always select a Spatial relation (cf. (15b)), whose specifier and complement are interpreted as Figure and Ground, respectively (this terminology being borrowed from Talmy (1985)). Therefore, a further claim should be added to (15):

- (15) a'. The lexical head  $x$  in the syntactic configuration in (14a) is always to be associated to an *Eventive relation*: if there is an external argument, it is interpreted as a *Source relation*; otherwise, it is interpreted as a *Transitional relation*.

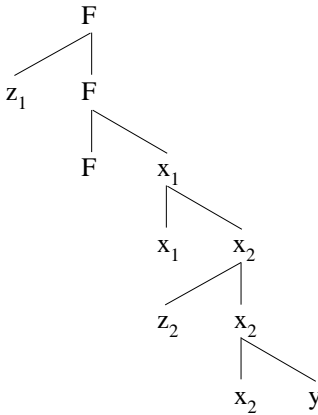
It is then important to realize that both instantiations of the Eventive relation (i.e., the Source and the Transitional relations) can also be directly read off from the pure relational syntax (cf. (15a')):<sup>12</sup> While the Source relation is

12. In this sense, our proposal is similar to that developed by Harley (1995). The main difference is that, with Hale and Keyser (1993), we do not analyze the syntactic head associated to the Eventive relation as a functional one.

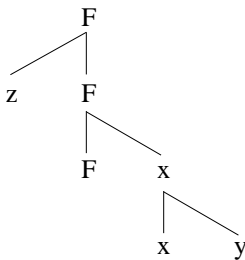
that involved in transitive structures (cf.  $x_j$  in (16)) and unergative structures (cf.  $x$  in (17)), the Transitional relation is that involved in unaccusative structures (cf.  $x_j$  in (18)).

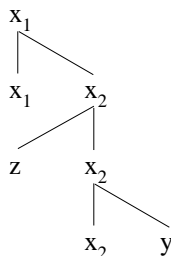
Accordingly, the only structural difference between transitive structures (cf. (16)) and unergative structures (cf. (17)) is based on the type of complement selected by the Source relation: while a Spatial relation is selected in (16) as complement, it is a non-relational element that is selected in (17). As a result, note that the transitive structure in (16) can be argued to partake of both an unergative structure (the Eventive relation  $x_j$  is interpreted as a Source relation due to the presence of an external argument) and an unaccusative structure (it includes a Spatial relation  $x_2$  expressed in a Figure-Ground configuration). See Mateu (2000) for more discussion.

(16) *Transitive structure*



(17) *Unergative structure*



(18) *Unaccusative structure*

Given our configurational/relational theory of argument structure, an important difference between structural semantic features and contentful ones must be crucially drawn (Mateu (1999)). As shown above, structural semantic features like Eventive ( $\{\text{Source/Transitional}\}$ ), Spatial, and Non-relational can be directly read off from the relational syntax of argument structure configurations. By contrast, we claim that the contentful values that can be associated with the structural ones are not relevant to the syntactic projection of argument structure. That is to say, we claim that contentful notions like terminal coincidence relation, central coincidence relation, BECOME, BE, etc., are not directly relevant to the syntactic projection of arguments. Let us verify this claim by contrasting the minimal pairs (19a)-(19b) and (19c)-(19d).

- (19) a. John went to the hall.  
 b. The spoon is on the table.  
 c. John corraled the horse.  
 d. John pushed the horse.

Despite the different contentful values associated with the Transitional relation (the positive one in (19a), say BECOME, and the negative one in (19b), say BE), and despite the different ones associated with the Spatial relation (say, terminal coincidence relation in (19a), and central coincidence relation in (19b)), it is nevertheless clear that both (19a) and (19b) are indistinguishable as far as their syntactic projection of arguments is concerned. We argue that this is due to the fact that both project the same argument structure, that in (18): cf. (20). Similarly, the same reasoning should be valid with respect to the pair (19c) (19d): e.g., although (19c) involves an abstract terminal coincidence relation and (19d) an abstract central coincidence relation, both project the same argument structure, the one in (16).<sup>13</sup>

13. Similarly, notice that Hale & Heyser assign both locative and locatum verbs the very same argument structure (cf. (10b)), despite the fact that the former are said to involve a terminal coincidence relation, while the latter are said to contain a central coincidence relation.

- (20) a. went [John [to the hall]]  
 b. is [the spoon [on the table]]

Quite importantly, if the conceptual content (i.e., the semantics not to be read off from syntax) is said to be irrelevant to the syntactic projection of arguments (Mateu (1999, 2000)), note that there is no need to make use of so-called linking rules (cf. Pinker (1989) or Levin & Rappaport Hovav (1995)), which have been motivated on the basis of recognizing that there are some syntactically relevant aspects of meaning (e.g., Change, Affectedness, Existence, Causation, etc.). With Baker (1997: 131), we assume that such rules can be dispensed with, this being due to our accepting a configurational theory of argument structure which is fully compatible with a strong version of *U(niformity) T(heta) A(ssignment) H(ypothesis)* such as that argued for by Baker (1997) and Mateu & Rigau (2000).

This said, one important caveat is in order here: of course, our claiming that contentful values are irrelevant to the syntactic projection of arguments does not mean that they are irrelevant to grammatical processes.<sup>14</sup> We are *just* claiming that they do not determine how arguments are projected to the syntax, this task being only carried out by the *structural* semantic features, i.e., those that can be directly read off from relational syntax.

With this sketchily reviewed theoretical background in mind, let us now deal with our lexical-syntactic analysis of resultative constructions.

#### 4. Resultative Constructions and Parametric Variation: A Lexical-Syntactic Approach

First of all, we want to spell out one important methodological assumption that appears to be relevant in stating the main goals of our lexical-syntactic approach to resultative constructions. Unlike syntactic approaches such as Hoekstra's (1988, 1992), Carrier & Randall's (1992), or Neeleman's (1994), we have taken pains to work out an explanation of why some languages (e.g., Romance) lack (true) resultative constructions.

The parametric issue involved in resultative constructions has also been recently studied by Snyder (1995), whose main proposal is based on the claim that English differs from Romance in permitting a phonologically null aspectual morpheme. According to Snyder (1995: 463-464), «in a language such as French or Spanish, however, in which the  $\emptyset_{\text{telic}}$  morpheme is unavailable, the addition of a secondary

14. To take a well-known example, it is often argued that so-called change of state verbs like *break* but not activity verbs like *push* can form middles or allow object-oriented depictive secondary predication (see Rapoport (1993), among others).

More relevant for our present purposes (i.e., the study of resultative predication) is the fact that it is obvious that one must distinguish between directional relations and locative relations, even though both become neutralized (i.e., they are simply Spatial relations) as far as the syntactic projection of arguments is concerned (cf. the above discussion on (19a)-(19b)). However, it is clear that only the former are relevant to resultative predication.

path predicate alone, even if it includes in its meaning a natural endpoint, should be insufficient to convert a process VP into an accomplishment VP».

Our lexical-syntactic approach will be shown to differ from Snyder's in at least two important respects: on the one hand, it will not be necessary for us to make use of poorly motivated elements like Snyder's telic morpheme, argued to be present in English but not in Romance. On the other hand, we will make it clear that Pustejovsky's (1991) or Snyder's (1995) intuitive observation that a process VP is «converted» into an accomplishment VP by the «addition» of a resultative predicate cannot receive an adequate explanation within the lexical-syntactic perspective pursued here. Rather, we will show that it is more theoretically and empirically adequate to posit that there is a main abstract accomplishment into which a subordinate process is conflated. In other words, the «added» element is not the resultative phrase, but the process verb.

In particular, we want to argue that the explanation of the lack of true resultatives in Romance must be sought in Talmy's (1985) insights on so-called lexicalization patterns. Talmy's lexicalization patterns (e.g., conflation of Motion with Path in Catalan (see (21a)) vs. conflation of Motion with Manner in English (see (21b))<sup>15</sup> have been shown to be provided with explanatory power when translated into syntactic terms (cf. Mateu & Rigau (1999, 2000)).

- (21) a. El noi va entrar a la habitació ballant. (Catalan)  
 The boy went+into loc-prep the room dancing
- b. The boy danced into the room.

Our main proposal is that the parameterization of the conflation processes involved in (21) is sensitive to the nature of the morphosyntactic properties associated with one lexical-syntactic element, that expressing directionality. In Romance (e.g., Catalan), it is usually the case that the directional/Path relation is lexically conflated into the verb (and hence its so-called verb-framed nature), while in English it is not (and hence its so-called satellite-framed nature).<sup>16</sup> Quite interestingly, the fact that this conflation is a fossilized process in Catalan has important consequences. As a reflex of this fossilized process, the morphosyntactic features corresponding to the complex verbal head formed by the motion verb plus the directional relation cannot be distinguished any longer. That is to say, the verbal form *entrar* ('to go into') is an atom as far as its morphophonological status is concerned: i.e., which morphophonological properties correspond to the verb and which ones to the directional preposition/particle cannot be distinguished. As argued by Mateu & Rigau (1999, 2000), the most important consequence of such a lexical saturation is that this fossilized lexicalization prevents Catalan from conflating Motion with Manner.

15. One caveat is in order here concerning apparent counterexamples: As noted by Talmy (1985), the existence of English verbs like *enter*, *exit*, *descend*, etc., is due to Latin influence. Accordingly, these examples fall out of the scope of the Germanic lexicalization pattern.

16. See Talmy (1991) for the distinction verb-framed languages vs. satellite-framed languages.





Quite interestingly, the generalized transformation operation is easily explained under Chomsky's (1995, 1998, 1999) minimalist assumptions: Grammar appears to be organized in such a way that the computational system allows different syntactic structures to be derived «in parallel». Merge, which is the most fundamental operation of the computational system, will undertake the task of conflating them into only one structure (cf. Mateu & Rigau (2000)).

It is now clear why Pustejovsky's (1991) or Snyder's (1995) intuition-based observation that a process VP (e.g., *dance*) can be converted into an accomplishment VP by «adding» a directional PP (e.g., *into Y*) to the former, is nothing more than a by-product of a surface illusion. Despite appearances, it is the unergative structure that comes to be subordinated to the main unaccusative structure. Accordingly, it is the process verb *dance*, but not the directional phrase *into the room*, that must be regarded as the «added» element.

On the other hand, our claim is that the use of generalized transformations in the lexical-syntactic domain is not only limited to covering cases involving a verb expressing Manner plus a directional PP. If we want to provide a unified explanation of Talmy's (1985) lexicalization patterns, our lexical-syntactic analysis will have to be extended to AP resultative constructions as well, those involving an abstract Path (cf. Jackendoff (1990) or Goldberg (1995)). Quite clearly, it should be desirable to appeal to the same reason when explaining both the ungrammaticality of the Catalan examples in (24) and (25).<sup>17</sup>

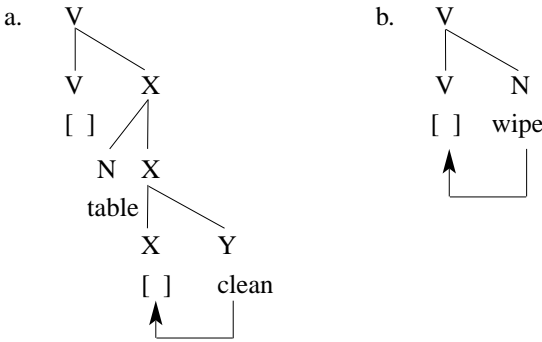
- (24) a. \*Ell va ballar a dins de l' habitació. (Catalan)  
           He danced inside of the room  
       b. \*Ells van riure l'espectacle fora de la ciutat.  
           They laughed the show out of the town  
       c. \*Ell va xutar la pilota a dins del bany.  
           He kicked the ball inside of the bathroom  
       a'. He danced into the room.  
       b'. They laughed the show out of the town.  
       c'. He kicked the ball into the bathroom.
- (25) a. \*La noia va fregar la taula neta.  
           The girl wiped the table clean  
       b. \*Ella va martellejar el metall pla.  
           She hammered the metal flat  
       c. \*Ell va empènyer la porta oberta.  
           He pushed the door open  
       a'. The girl wiped the table clean.  
       b'. She hammered the metal flat.  
       c'. He pushed the door open.

17. The examples in (24a, c) are grammatical on the irrelevant locative reading (e.g., 'He was dancing at a fixed location'). Similarly, the examples in (25) are grammatical on the irrelevant attributive reading (e.g., *la taula neta*, 'the clean table').

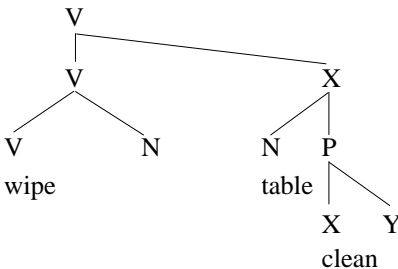
If the present parallelism is to be maintained, the prediction is that resultative constructions involving conflation of two different lexical-syntactic structures are absent from Romance, but not from English. That is, if our analysis is on the right track, the ungrammaticality of the Catalan examples in (25) could be explained as follows: it is the case that the lexical-syntactic element corresponding to the abstract directional relation is lexically conflated into the verb in Romance. That is to say, its verb-framed nature involves obligatory conflation of the directional relation into the verb. As a result, the conflation of this complex verbal head with lexical material from another independent lexical-syntactic object turns out to be excluded.

On the other hand, the satellite-framed nature of English allows the abstract Path constituent involved in resultatives (e.g., *clean* in (25a')) to be left stranded. As a result, the phonologically null matrix of the transitive verb in (26a) must be saturated by another full matrix from an independent lexical-syntactic object, e.g., the one in (26b). Due to the satellite nature of the abstract directional relation *X* in (26a), the phonologically null matrix of the abstract causative verb in (26a) must be saturated by an external lexical-syntactic object: it appears to be saturated by the phonological content provided by the verbal head in (26b). The fusion or conflation of the subordinate verb in (26b) into the main verb in (26a) is depicted in (27):<sup>18</sup>

(26)



(27)



18. Recall that, with Hale & Keyser (1998), we assume that the external argument (i.e., *the girl*) is to be introduced by the relevant functional projection (be it Chomsky's (1995) *v* or Kratzer's (1996) Voice Phrase).

Therefore, the lexical-syntactic operation accounting for the so-called lexical subordination process (e.g., cf. Levin & Rapoport (1988), Mateu & Amadas (1999)) has been shown to be constrained by the nature of the morphophonological properties associated with lexical-syntactic elements.

Let us now deal with some interesting predictions of our parametric approach to resultative constructions. Note that an important generalization emerges from our lexical-syntactic analysis: namely, there are no Path adjectives in Romance, because the directional/Path relation is always conflated into the verb. Hence, it is no surprising at all that sentences like those in (28) are fully impossible in Romance.<sup>19</sup> Recall that the conflation of the directional/Path element into the verb in Romance excludes its conflation with a complex head from an independent lexical-syntactic object.

- (28) a. She danced/swam/sprinted free of her captors.  
 b. However, if fire is an immediate danger, you must *jump clear of the vehicle*. (*Illinois rules of the road*, 1989 edition, p. 81) [italics in original]

Our proposal is then that the sentences in (28) involve a conflation of unergative verbs such as *dance*, *swim*, *sprint*, *jump* into an abstract unaccusative verb expressing motion. Therefore, the same analysis of (23) is valid for the sentences in (28): the Path constituent formed by *free/clear* can be stranded in English due to its satellite-framed nature. The subordinate unergative structure corresponding to *dancing*, *swimming*, etc., can then come to be integrated into the main unaccusative structure by means of a generalized transformation.

It is then the case that adjectives in Romance can not contain a directional/Path relation. Concerning the existence of so-called pure resultatives in Romance, it seems plausible to assume that the adjectival phrase in (29) corresponds to an abstract Place constituent, the Path/directional relation being conflated into the verb. This accounts for the usual classification of *tornar* or *deixar* as directional verbs.

- (29) a. Ells es tornaren bojos.  
 They ES go+path crazy  
 'They went crazy.'  
 b. El Pep va deixar la Maria embarassada.  
 Pep cause+path Mary pregnant  
 'Pep made Mary pregnant.'

Finally, we will conclude this section with a brief discussion on an important distinction that has often been neglected in the literature on resultative constructions. We will make it clear that two types of resultatives must be distinguished clearly: true/non-adverbial resultatives *vs.* false/adverbial resultatives. The existence of the latter in Romance languages has been attested in many works (e.g., cf. Bosque

19. The data in (28) come from Levin & Rappaport Hovav (1996: 499).

(1990), Demonte (1991), Demonte & Masullo (1999), Morimoto (1998), Napoli (1992), among others). Although Romance resultatives have been classified sometimes as normal resultatives, it is however clear that they do not behave as true resultatives but as adverbial modifiers. Next we will review some evidence put forward by Washio (1997) that shows their «adverbial» status.<sup>20</sup> Consider the French data in (30) from Washio (1997: 29).

- (30) a. J' ai noué les lacets de mes chaussures bien serré.  
I tied the laces of my shoes very tight
- b. Hachez-les menu. (*les* = the onions).  
Cut them fine (i.e., into fine pieces)

As noted by Washio, adjectives like those found in (30) have traditionally been treated as «adverbs» or «adjectives used as adverbs» (e.g., cf. Grevisse (1980)). It is interesting to note that in French the «adverbial» nature of the adjectives in (30) is coherent with their formal property of lacking agreement.<sup>21</sup> Quite correctly, Washio (1997: 17) relates the data in (30) to the possibility that these adjectives can often alternate with adverbs with virtually no difference in meaning (cf. (31)):

- (31) a. He tied his shoelaces tight/tightly.  
b. He tied his shoelaces loose/loosely.  
c. He spread the butter thick/thickly.

Moreover, Washio observes that the standard paraphrase used by the proponents of the lexical subordination approach is not valid when applied to «adverbial» resultatives (cf. (32)- (33)):<sup>22</sup>

20. More evidence in favor of the «adverbial» (that is, non-argumental) nature of Romance resultatives can be found in Legendre (1997). Here we will limit ourselves to quoting the conclusion arrived at by Legendre (1997: 81): «French resultative secondary predicates have properties that distinguish them from English and Dutch resultatives (...) they are adjuncts rather than arguments, and they are adjoined to VP».

We will not comment on the syntactic analysis of false/«adverbial» resultatives here (cf. Legendre (1997)).

21. This notwithstanding, in Romance languages like Catalan or Spanish, the adjectives in (30) are not «used as adverbs», but agree with the noun:

- (i) a. M' he lligat els cordons de les sabates ben *estrets*.  
Me-dat have-1<sup>st</sup> tied the laces of the shoes very tight-pl
- b. Talla-les *menudes*.  
Cut-them fine-pl

Both *estrets* and *menudes* are false resultatives; see the following footnote.

22. To be sure, more tests can be worked out. For example, the question-test in (i) is also valid for distinguishing «adverbial» (cf. (ia)) from true (cf. (ib)) resultatives.

- (i) a. How did John paint the wall? (cf. John painted the wall red)  
b. \*How did the diva sing the audience? (cf. The diva sang the audience asleep)

- (32) a. He cut the meat thick.  
 b. # He caused the meat to become thick by cutting it.
- (33) a. He hammered the metal flat.  
 b. = He caused the metal to become flat by hammering (on) it.

Given the present discussion, we are now well-prepared to comment on the possible reasons that forced Napoli (1992: 88) to conclude that «it appears that Romance languages in general exhibit resultatives». Actually, it seems to us that she included any element with a sense of resultativity under the label of «resultative predicate».

Consider Napoli's (1992: 72) observation: «While Italian does not have the types of resultatives exemplified in *Sue laughed Ralph out of the room* (given that it lacks productive linking flexibility) and *Sam cried himself sick*, it does have transitive sentences with resultatives of the type exemplified for English in *That butcher slices meat thin*. However, the exact translation of English *The river froze solid* is at best marginal and at worst ungrammatical, as we saw in *\*Il fiume è ghiacciato solido*».

Her observation can be explained as follows. Italian has «adverbial» resultatives like *the butcher slices meat thin* or *John painted the wall white*, but not the true resultatives found in English, namely, those lacking an adverbial character like *the river froze solid* or *the dog barked the chickens awake*.<sup>23</sup>

The «adverbial» nature of Romance resultative predicates can actually be related to the fact that they are generally combined with change of state verbs but not with process verbs, as shown by Napoli's (1992: 77) examples in (34):

- (34) a. Gli operai hanno caricato il camion pieno al massimo.  
 The workers loaded the truck full to the brim  
 'The workers loaded the truck full to the brim.'
- b. \*Gianni ha martellato il metallo piatto  
 Gianni hammered the metal flat  
 'Gianni hammered the metal flat.'

The contrast in (34) can be explained as follows: the AP *pieno al massimo* in (34a) acts as a modifier of the result lexically encoded into the verb *caricare* ('load'). We fully agree with Morimoto's (1998) claim that resultative phrases in Romance can only specify or intensify the result encoded into the main verb. That is to say, the result state has to be present in the verb. Accordingly, note that the label of «resultative» for such modifiers is not but a misnomer. Our claim that «adverbial» resultatives are modifiers forces us to conclude that they must appear outside of

23. Moreover, note that Napoli's claim that «<Italian> lacks productive linking flexibility» boils down to a pure observation that appears to be naturally explained by our lexical-syntactic approach. Crucially, its lacking linking flexibility must be related to the fact that Italian is a verb-framed language.

the main argument structure of the sentence: they are adjoined to VP (cf. Legendre (1997)).

On the other hand, the ungrammaticality of (34b) is coherent with the absence of true/non-adverbial resultatives in Romance. We have argued that true resultatives must be internal to the main argument structure of the sentence (cf. (26a)).

The relevant conclusion to be drawn from the present discussion appears to be the following one: the existence of false/adverbial resultatives in Romance languages cannot be used as an argument against the predictions of our parametric approach to (true/non-adverbial) resultatives.

## 5. Concluding Remarks

We have shown that semanticocentric approaches cannot explain the parametric variation in a principled way. The basic explanation of the parametric issue involved in resultative constructions has been related to one empirical fact, namely, the morphological properties associated with the lexical-syntactic element corresponding to the directional relation are not the same in English as in Romance.

We have concluded that resultatives involving conflation of two different lexical-syntactic structures are present in English but not in Romance: it is the case in English that the abstract Path constituent encoded into the resultative phrase can remain stranded due to its satellite-framed nature (Talmy (1991)), and thus the cross-sentential conflation carried out by Merge can take place. By contrast, Romance does not have the aforementioned resultatives because of its verb-framed nature (Talmy (1991)).

Unlike the semanticocentric approaches, we have argued that the relevant lexical subordination process involves a syntactic operation, rather than a semantic one. The fact that the syntactic operation has been shown to be constrained by lexically encoded morphological features is coherent with Chomsky's (1995, 1998) minimalist approach. With Mateu & Rigau (1999, 2000), we conclude that parametric variation can be related not only to the morphological properties associated to functional categories, as has been argued by Borer (1984) or Chomsky (1995), among others, but also to those associated with lexical categories, as has been independently shown by Snyder (1995) or Juffs (1996), among others.

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