

On the Relational Semantics of Transitive Denominal Verbs*

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1. Introduction

The main goals of my present paper can be summarized as follows: I provide a relational semantic account of two classes of transitive denominal verbs (locative verbs like *shelve* and locatum verbs like *saddle*; Clark and Clark 1979). Although I agree with Hale & Keyser's (1998) syntactic analysis of both classes of verbs, I disagree with their semantic analysis. In particular, my main proposal is that *both* locative and locatum verbs can be regarded as causative change of state verbs, whose telicity is determined by the presence of an abstract terminal coincidence relation, the same relation postulated for telic deadjectival verbs. Our pursuing the consequences of such a hypothesis leads us to posit a theoretically desirable reduction of the basic structural types of Lexical Relational Structures. The present paper also contributes to showing some of the advantages of adopting a syntactic approach to lexical decomposition (Mateu (2000)).

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My present modification of Hale & Keyser's analysis will be carried out on the basis of Romance languages, mainly on the basis of Catalan data. Let us then describe the data. Locative verbs like those in 1 are formed on a noun which corresponds to the final location of some entity, the located entity occupying the direct object position. On the other hand, locatum verbs like those in 2 are formed on a noun which corresponds to the displaced object (hence the **locatum** object), the location occupying the direct object position.

- | | | | |
|-----|--|-----------------------|-----------|
| (1) | a. Ell engabià el seu ocell preferit. | N = gàbia 'cage' | (Catalan) |
| | he (in)caged the his bird favorite | | |
| | b. Ella empaquetà els llibres. | N = paquet 'packet' | |
| | she (in)packed the books | | |
| | c. Ella embotellà el vi. | N = vi 'wine' | |
| | she (in)bottled the wine | | |
| (2) | a. Ella ensellà el cavall. | N = sella 'saddle' | (Catalan) |
| | she (in)saddled the horse | | |
| | b. Ell emparquetà el seu pis. | N = parquet 'parquet' | |
| | he (in)parqueted the his flat | | |
| | c. Ella els embenà la ferida. | N = bena 'bandage' | |
| | she them _{dat} (in)bandaged the wound | | |

Given this mere description, it becomes clear why those working on localist theories of semantics have constantly paid primary attention to these verbs. My main purpose in the following section (section 2) is to provide the necessary background on some localist approaches to these verbs. As we will see later, it is precisely Labelle's (1992a/b) semantic analysis of these verbs that will be taken as one of my main starting points in my lexical relational account.

2. Three semantic approaches: Pinker (1989), Jackendoff (1990), and Labelle (1992a/b)
 Being inspired by Rappaport and Levin's (1988) analysis of locative alternation, Pinker (1989) posits that location verbs (for example, *pocket*) are lexically associated with the semantic template of 3a (cf. 3b), whereas locatum verbs (for example, *butter*) are lexically derived by means of the Lexical Subordination Process depicted in 4a: cf. 4b.

- (3) a. X CAUSE [y GO TO z]
 b. X CAUSE [y GO TO *pocket*]
- (4) a. x CAUSE [z GO TO STATE] BY MEANS OF [x CAUSE [y GO TO z]]
 b. x CAUSE [z GO TO STATE] BY MEANS OF [x CAUSE [*butter* GO TO z]]

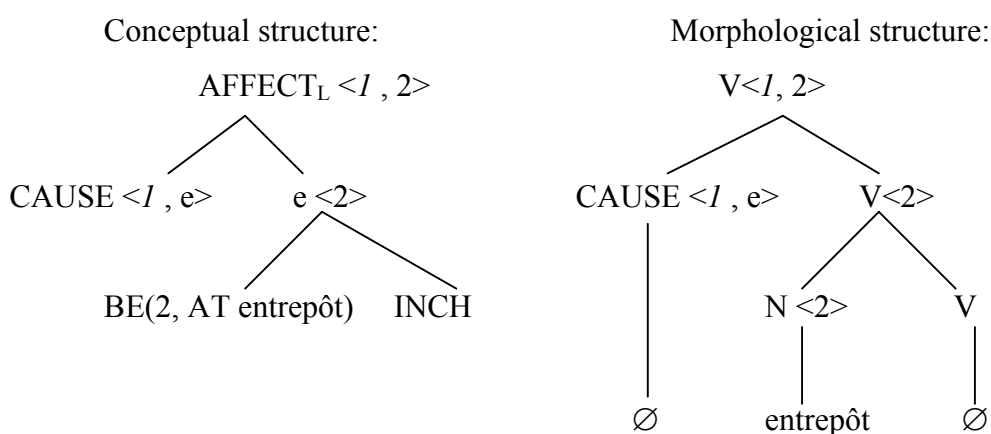
On the other hand, Jackendoff (1990) posits that both the locative verb *pocket* and the locatum verb *butter* have similar (though not identical) lexical conceptual structures. According to Jackendoff, the main difference between these two classes of verbs is that the incorporated argument is the Goal in locative verbs (cf. 5a), but it is the Theme in locatum verbs (cf. 5b). As a result, the linking or correspondence between the thematic tier and the action tier is different in each case: in 5a, the Theme is associated to the second role of AFF ('affect'), that is, to the patient role, whereas in 5b it is the Goal that is associated to the patient. Note then that it is precisely the patient role that is strongly implicated in the direct object selection.¹

- (5)
- | | | |
|----|--|-------------|
| a. | $\left[\begin{array}{l} \text{CAUSE } ([\text{Thing } \forall], [\text{Event GO } ([([\text{Thing } \exists], \\ \text{[Path TO } ([\text{Place IN } ([\text{Thing } \textit{POCKET}])])])])]) \\ \text{AFF } ([\text{Thing }]^{\forall}_i, [\text{Thing }]^{\exists}_j) \\ \text{Event} \end{array} \right]$ | 1-tier |
| | | Action tier |
| b. | $\left[\begin{array}{l} \text{CAUSE } ([\text{Thing } \forall], [\text{Event INCH [BE } ([\text{Thing } \textit{BUTTER}], \\ \text{[Place ([ON } ([\text{Thing } \exists])])])])]) \\ \text{AFF } ([\text{Thing }]^{\forall}_i, [\text{Thing }]^{\exists}_j) \\ \text{Event} \end{array} \right]$ | 1-tier |
| | | Action tier |

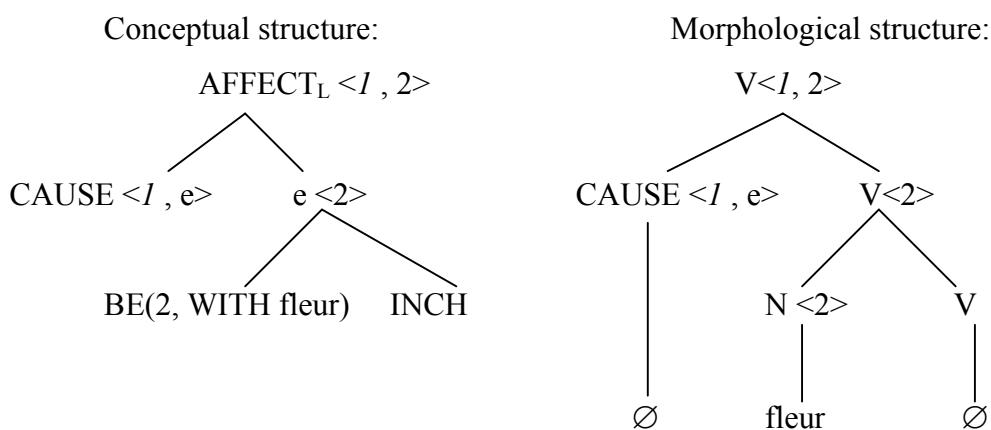
Quite importantly, one insightful criticism found in Labelle (1992a/b) is that there is some redundancy in Pinker's and Jackendoff's systems, which prevents them from being considered as explanatory approaches. According to her, nothing is gained by separating the so-called **affected argument** from the **Theme argument** in locatum verbs. Her proposal is that in both locative and locatum verbs, the incorporated noun can be argued to semantically identify the final state of the process which affects the entity projected to the direct object

position. According to Labelle (1992b), the difference between these verbs is that locative verbs like Fr. *entreposer* ('to warehouse') incorporate a locative relation, whereas locatum verbs like Fr. *fleurir* ('to cover with flowers') incorporate a possessive relation (cf. (6)). Notice that it is precisely this different choice of semantic relations that provokes the reversal of the subject-predicate relations between the incorporated noun and the direct object.

(6) a. *entreposer* ('to warehouse')



b. *fleurir* ('cover with flowers')



It seems to us that Labelle's analysis is to be preferred over Pinker's and Jackendoff's mainly because of its strong uniformity in the semantic representation of both classes of verbs, her main insight being that the incorporated noun semantically identifies the final state of the process encoded into the verb. However, despite its uniformity, her analysis is not exempt of problems. On the one hand, it is not clear to us how the subpart of linking shown in 7 is to be made. It is simply stipulated.

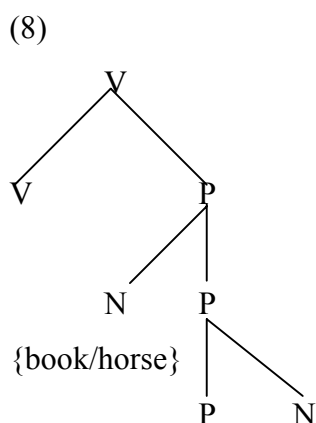
- (7) a. BE (2, AT entrepôt) ----- N <2>
 b. BE (2, WITH fleur) ----- N <2>

On the other hand, note that Labelle's semantic decomposition of both locative and locatum verbs is based on five relational conceptual predicates: *AFFECT*, *CAUSE*, *BE*, {*AT* or *WITH*}, and *INCH*. It is important to realize that the empirical motivation of these relational predicates is intratheoretical: they are not all justified by morphosyntactic reasons. To put it crudely, it is not clear whether Labelle's analysis (and Pinker's and Jackendoff's analyses as well) can successfully cope with the typical problem to be found in semantically-based lexical decomposition works: that is, the frequent absence of principled constraints (see Bouchard (1995) and Mateu (2000) for relevant critical remarks).

This leads us to pursue an explanation of locative and locatum verbs in another different framework, that of Hale and Keyser (1998), where the lexical decomposition of these verbs is carried out on the basis of restricted and well-established syntactic principles (section 3). Of course, there is another well-known alternative, that pursued by Fodor and its followers, according to which words do not have internal structure, an alternative I will not review here (see Fodor and Lepore (1999); cf. Hale and Keyser (1999) for a reply).

3. Hale and Keyser's (1998) lexical relational analysis revisited

According to Hale and Keyser (1998), both locative and locatum verbs are derived from the Lexical Relational Structure (LRS) in 8. The non-relational elements *shelf* and *saddle* undergo head-to-head movement to the prepositional node, which in turn raises to the causative verb, yielding the surface form.



{shelf/saddle}

Hale and Keyser (1998) posit that the only difference to be found between locative and locatum verbs concerns the semantic value of the preposition in 8: the preposition incorporated into the verb *shelve* is a **terminal coincidence relation**, which also appears in its analytic paraphrase ‘to put the book *onto* the shelf’ (cf. 9a), whereas that incorporated into the verb *saddle* is a **central coincidence relation**, which is argued to be visible in its corresponding analytic paraphrase ‘to fit the horse *with* a saddle’ (cf. 9b). According to Hale (1985), a terminal coincidence relation involves a coincidence between one edge or **terminus** of the theme’s path and the place, while a central coincidence relation involves a coincidence between the center of the theme and the center of the place.

- (9) a. John shelved the book.
b. John saddled the horse.

However, despite its initial plausibility, I will show that Hale & Keyser’s analysis of the semantic value of the P in 8 is partly based on a misleading intuition, since it does not tally with the linguistically relevant semantic and/or aspectual facts to be presented in section 3.1. Although I agree with Hale and Keyser in their analysis of locative verbs, I part ways with them when analyzing locatum verbs.²

More generally, I want to argue that the conceptual notions of terminal coincidence relation (exemplified by prepositions like *to*, *out of*, or *off of*) and central coincidence relation (exemplified by prepositions like *at*, *in*, or *with*) are to be related to the aspectual notions of **telicity** and **atelicity**, respectively. Accordingly, the LRS of telic verbs (locative and locatum verbs included) will be argued to contain a terminal coincidence relation, while the LRS of atelic predicates (e.g., verbs of contact like *push* or instrumental verbs like *brush*) will be argued to contain a central coincidence one. Concerning locative and locatum verbs, the data to be presented in section 3.1 will be put forward to support my hypothesis that these verbs involve the abstract terminal coincidence relation that can be said to be implicated in any telic change of state verb.

Before entering into this issue, let us briefly point out why I think that a lexical relational approach to locative verbs like that of Hale and Keyser appears to have more

explanatory power than those previously reviewed semantic approaches. Undoubtedly, one of the most attractive qualities of Hale and Keyser's approach is their principled answer to the limits of argument structure, which (more generally) can also be argued to constrain the configurational part of lexical decomposition. Their tenet is that these limits are dictated by very few well-established syntactic principles, and not by our intuitions on semantic interpretation. Moreover, the structural part of lexical decomposition is assumed to be basically carried out by taking into account morphological and syntactic reasons. For example, the LRS of locative verbs in 8 is assumed to implicate only two relational predicates V and P, which can be semantically associated with a causative predicate and a terminal coincidence relation, respectively. Other arguable relational predicates like those found in Labelle's semantic analysis in 6 (e.g., *BE* or *INCH*(oative)) do not appear to have morphological or syntactic motivation, and are thereby excluded from the structural representation of 8. Given this, note that lexical decomposition turns out to be guided not by our intuitions on semantic representation, but by pure syntax, an enterprise not to be mixed with that carried out by Generative Semanticists *in illo tempore*: we do not syntacticize semantic intuitions or encyclopedic knowledge! Intuitions and background knowledge are put aside, and only linguistic or syntactic facts must be taken into account when doing lexical decomposition (cf. Bouchard (1995) or Mateu (2000) for more discussion on related issues).

3.1 {Terminal/central} coincidence relations revisited. Evidence from Romance

With these previous remarks in mind, let us deal with the modification of Hale and Keyser's analysis of locatum verbs. As pointed out above, my hypothesis is that both locative and locatum verbs can be argued to incorporate the terminal coincidence relation that can be associated to change of state verbs. First of all, note that locatum verbs, which are argued to incorporate a central coincidence relation by Hale and Keyser, behave as telic predicates in the Catalan examples in 10. Unlike Hale and Keyser, I claim that the central coincidence relation is only to be found in atelic predicates: for example, see those in 11, the central coincidence preposition being visible in 11a or invisible in 11b.

- (10) a. Ella ensellà el cavall {*durant/en} cinc segons. (Catalan)
 she (in)saddled the horse {*for/in } five seconds
 b. Ell emparquetà el seu pis {??durant/en} deu minuts.
 he (in)parqueted the his flat {??for/in} ten minutes

- (11) a. En Joan va estar amb la Maria {durant/*en} deu minuts.
 Joan was with Maria {for/*in} ten minutes
 b. En Joan va empènyer el carro {durant/*en} deu minuts.
 Joan pushed the cart {for/*in} ten minutes

On the other hand, since locative verbs incorporate a terminal coincidence relation, they are expected to behave like those locatum verbs in 10. This prediction is borne out, as shown in 12.³

- (12) a. En Joan enlleixà tots els seus llibres {*durant/en} cinc minuts.
 Joan (in)shelved all the his books {*for/in} five minutes
 b. L'helicòpter aterrà a la pista {*durant/en} cinc minuts.
 the helicopter (to)landed to the runway {*for/in} five minutes

Let us now concentrate on the data in 13a, which contains a locatum verb like *enfarinar* ('to flour'), and 13b, which contains a locative verb like *engabiar* ('to cage'). These data seem to contradict my hypothesis, since the atelic reading appears to be as acceptable as the telic one. I think that the atelicity of 13a is due to factors which are different from those involved in 13b. Concerning the latter, i.e. 13b, I claim that its atelic reading is to be related to that corresponding to its analytic paraphrase in 13c: the verb *mantenir* ('to keep') can be argued to select a central coincidence relation in contexts involving a sort of **static causation** like that implicated in 13c.

- (13) a. En Joan enfarinà les mandonguilles {?durant/en} deu segons.
 Joan (in)floured the meatballs {for/in} ten seconds
 b. Ell engabià el seu ocell preferit {durant/en} un minut.
 he (in)caged the his bird favorite {for/in} one minute
 c. Ell mantingué {engabiat/a la gàbia} el seu ocell preferit durant un minut.
 he kept {(in)caged/in the cage} the his bird favorite for one minut

On the other hand, I think that the atelic reading of 13a is due to a different phenomenon, which is presumably related to that involved in the atelic reading of the change of state variant of some locative alternation verbs like *spray* (cf. 14).

- (14) a. En Joan va ruixar la paret de pintura durant cinc minuts. (Catalan)
 b. John sprayed the wall with paint for five minutes.

Locative alternation verbs like *spray* or *smear* are classified by Brinkmann (1997) as **mass verbs**, which typically describe the motion of substances. Given the relevant encyclopedic knowledge, note that the process of ‘putting paint onto the wall in a spraying manner’ could be extended ad infinitum since we can put paint onto the wall as many times as we wish. It is important to realize that a similar phenomenon appears to be involved in 13a. In this sentence, the conceptual displaced object is not a bounded object as it is in 10a, but we are dealing with the mass noun *farina* ‘flour’, which can be put onto the cake as many times as we wish.

Examples such as those in 14 are put forward by Brinkmann (1997) to knock down Pinker’s (1989) and Gropen’s et al (1991) generalization that goal arguments must be specified to change state to become the direct object. According to this generalization, goal-object sentences should be achievements or accomplishments and then should combine only with temporal frame adverbials but not with durational adverbials.

However, I do not think that Pinker’s generalization must be abandoned, since in any case the change of state undergone by the direct object *la paret* (‘the wall’) in 14 or *les mandonguilles* (‘the meatballs’) in 13a must be linguistically (i.e. pragmatics aside) differentiated from what happens in a sentence like that in 11b. For example, it is not accidental at all that adjectival passives with the perfective verb *estar* (perfective ‘be’) in 15a and 15b are always entailed from the atelic reading of 14a and 13a, respectively, whereas such an entailment cannot be drawn from 11b (cf. 15c).

- (15) a. La paret està ruixada de pintura. (Catalan)
 the wall perf.be.3rdsg sprayed of paint
 b. Les mandonguilles estan enfarinades.
 the meatballs perf.be.3rdpl (in)floured
 c. *El carro està empès.
 the cart perf.be.3rdsg pushed

In short, the atelicity of 11b and the atelicity of 13a and 14 must be attributed to different reasons: the atelicity of the former must be related to the presence of a central coincidence relation, whereas the atelicity of the latter must be attributed to the **coercion** effects derived from the interaction of the manner component associated to the action with the unbounded nature of the mass term involved.⁴

On the other hand, it is important to stress the fact that the analysis of locatum verbs as involving an abstract terminal coincidence relation (and not a central coincidence one), allows us to account for the wellformedness of the **Middle Formation** examples in 16, and the **Secondary Predication** examples in 19, since these two tests have been considered as typical of change verbs that have a **terminus** involved (cf. Rapoport (1993), among others). According to Rapoport, those verbs that can enter into the Middle construction can also have object-host depictives. Given the fact that both constructions are restricted to change verbs, it is then expected that verbs that cannot head middles cannot head depictives either. In our present case, such a prediction is borne out if we compare locatum verbs like *ferrar* ('to shoe') or *enfarinar* ('to flour'), or typical change of state verbs like *coure* ('to cook') or *netejar* ('to clean'), which all incorporate a terminal coincidence relation, with atelic verbs like *empènyer* ('to push') or *perseguir* ('to chase'), which incorporate a central coincidence relation. As expected, only the former verbs can partake of the Middle construction and the Secondary Predication construction, whereas the latter cannot.⁵

- (16) a. Aquestes eugues es ferren fàcilment. (Catalan)
 these mares ES shoe easily
 b. Aquestes mandonguilles s'enfarinen fàcilment.
 these meatballs SE (in)flour easily
- (17) a. Aquest tipus de verdura es cou ràpidament.
 this kind of vegetable ES cooks fast
 b. Les neveres velles no es netegen fàcilment.
 the fridges old not ES clean easily
- (18) a. *Aquestes eugues s'empenyen fàcilment.
 these mares SE push easily
 b. *Aquests pollastres es persegueixen fàcilment.

these chickens ES chase easily

- (19) a. Les eugues_i el granger no les_i ferra mai prenyades_i
 the mares_i the farmer not them_i shoes never pregnant_i
 b. Els pastissets_i la Maria els_i enfarinà calents_i
 the cakes_i Maria them_i (in)floured hot_i
- (20) a. Les verdures_i la Maria les_i cou fresques_i
 the vegetables_i Maria them_i cooks fresh_i
 b. La nevera vella_i la Maria la_i va netejar desendollada_i
 the fridge old_i Maria it_i cleaned unplugged_i
- (21) a. ??Les eugues_i en Joan les_i va empènyer prenyades_i
 the mares_i Joan them_i pushed pregnant_i
 b. ??Els pollastres_i en Joan els_i va perseguir cansats_i
 the chickens_i Joan them_i chased tired_i

Given these contrasts, I conclude that the fact that locatum verbs like *ensellar* ('to saddle') or *enfarinar* ('to flour') behave as change of state verbs like *netejar* ('to clean') with respect to the Middle Formation and Secondary Predication tests, can be derived from the hypothesis that both classes of verbs involve the abstract terminal coincidence relation, which has been said to be the lexical source of their completeness/telicity.

Unsurprisingly, the data in 22 concerning locative verbs like *enlleixar* ('to shelve') also conform with this generalization. It becomes then clear that Hale and Keyser's statement that *shelve* incorporates a terminal coincidence relation is not to be based on a pure intuition, but rather on linguistic facts like those in 22.

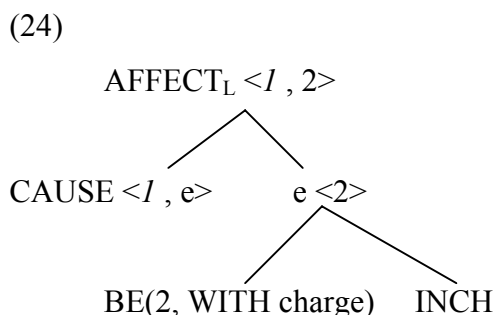
- (22) a. Aquests llibres s'enlleixen fàcilment.
 these books SE (in)shelve easily
 b. En Joan enlleixà [el llibre]_i [tort]_i
 Joan (in)shelved [the book]_i [not-straight]_i

Therefore, if my generalization concerning the correlations between conceptual notions like terminal/central coincidence relations and aspectual notions like telicity/atelicity

is on the right track, it turns out that the evidence in 16 through 22 militates against postulating a central coincidence relation like an abstract *WITH* as the head of the innermost predicate in the LRS of locatum verbs, as in Labelle's (1992b) lexical conceptual structure, or in Hale and Keyser's (1998) lexical relational structure.

On the other hand, a central coincidence relation (*WITH*) has also been postulated to be involved in the change of state variant of locative alternation verbs. Let us now exemplify why such a proposal cannot be directly translated to Romance, as is done by Labelle (1992a: 305; 1992b: 30) in her semantic analysis of 23 in 24, which corresponds to the semantic structure of the change of state variant of the locative alternation verb *charger* ('to load').

- (23) Jean a chargé le camion de briques. (French)
Jean loaded the truck with bricks



Despite the intuitive plausibility of 24, it is important to point out that in the change of state variant sentences containing the locative alternation verb *load*, the most natural preposition introducing the so-called locatum object in Romance is not the central coincidence preposition corresponding to the English *with*, but the partitive preposition corresponding to the English *of* in *the truck is full of bricks*. As can be inferred from the Catalan data in 25 and 26, the central coincidence preposition *amb* ('with') is only licensed as a certain kind of adjunct instrumental object, requiring then an implicit or explicit agent: this explains why this preposition is not to be found in adjectival participial sentences where the agent has been eliminated (cf. 25d), nor in sentences coappearing with a true instrumental (cf. 26b).

- (25) a. Ell va carregar el camió de totxos. (Catalan)

he loaded the truck of bricks

b. Ell va carregar el camió amb només vint totxos.

he loaded the truck with only twenty bricks

c. Aquest camió està molt carregat de totxos.

this truck perf.be.3rdsg very loaded of bricks

d. *Aquest camió està molt carregat amb totxos.

this truck perf.be.3rdsg very loaded with bricks

(26) a. Ell va carregar el camió de totxos amb la grua.

he loaded the truck of bricks with the crane

b. ??Ell va carregar el camió amb totxos amb la grua.

he loaded the truck with bricks with the crane

As a result, I claim that it is wrong to postulate that the innermost head in the LRS of the verb *load* in Romance is a central coincidence relation corresponding to the English *with*. My proposal is that this inner head must be headed by the abstract terminal coincidence relation that can be associated to any change of state verb, this being the determinant of the telicity of locatum verbs, as we have seen above.

My main hypothesis can then be summarized as in 27:

(27) Both locative and locatum verbs are to be regarded as causative **change of state verbs**, whose telicity is determined by the presence of an abstract terminal coincidence relation.

Note that the hypothesis in 27 captures Labelle's (1992a/b) insight that the incorporated noun in both locative and locatum verbs semantically identifies the final state of the process. In this sense, it is also interesting to note that this hypothesis allows us to account for the so-called **Hamlet effect** noted by Boons (1986) and reviewed by Labelle (1992a: 286): It is the case that French locative verbs like *emprisonner* ('to imprison') or *abriter* ('to shelter') do not entail a physical movement or displacement of the theme. If anything, it can only be said to be pragmatically entailed. For example, consider the example in (28a). As pointed out by Labelle (1992a: 286), if Luc was already inside the cellar, Eva could imprison him simply by locking the door.

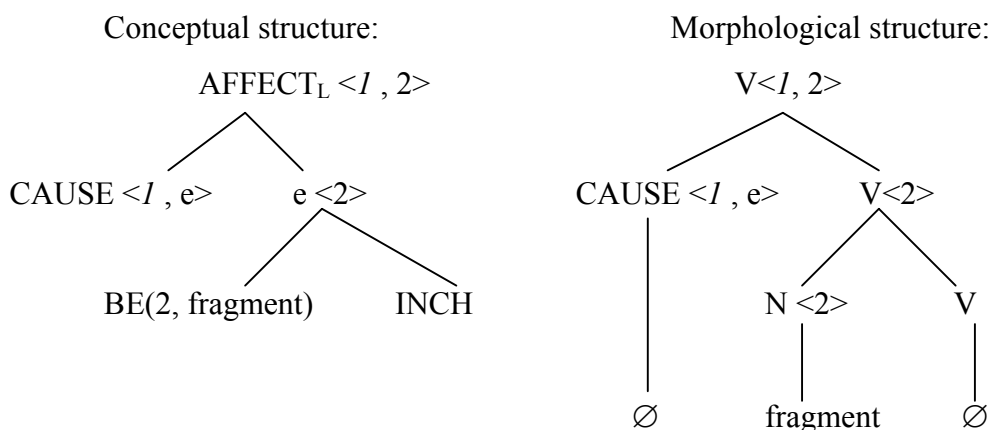
- (28) a. Eva emprisonne Luc dans la cave (French)
 b. Max abrite la voiture

Hamlet verbs are then to be regarded basically as change of state verbs but not, strictly speaking, as verbs involving a displacement of the direct object. As noted by Labelle, this movement can be pragmatically entailed, but it is not semantically entailed by the verb, since it is not included as part of its core information.

On the other hand, Labelle points out that there is a class of denominal verbs, which are not typically commented on when discussing locative and locatum verbs. Some of her relevant examples are those in 29. In 30 are depicted the conceptual and morphological structures assigned by Labelle (1992b: 16) to the denominal verb *fragmenter* ('to fragment').

- (29) a. Eve a *fragmenté* son roman (en épisodes). (French)
 Eve has [[fragment]-ed] her novel (in episodes)
 b. Lucie a *peloté* la laine.
 Lucie has [[ball]-ed] the yarn (=wound the yarn into a ball)

(30)



As can be seen in 31, note that, according to Labelle, the only difference between denominal verbs like those in 29, and locative or locatum verbs is that the former lack the relational element which takes the incorporated noun as its argument. As pointed out above, recall that one of my objections to Labelle's semantic analysis is that concerning the sublinking depicted in 31, which is simply stipulated.

- (31) a. BE(2, fragment) ----- N <2>

b. BE (2, AT entrepot)----- N <2>

c. BE (2, WITH fleur) ----- N <2>

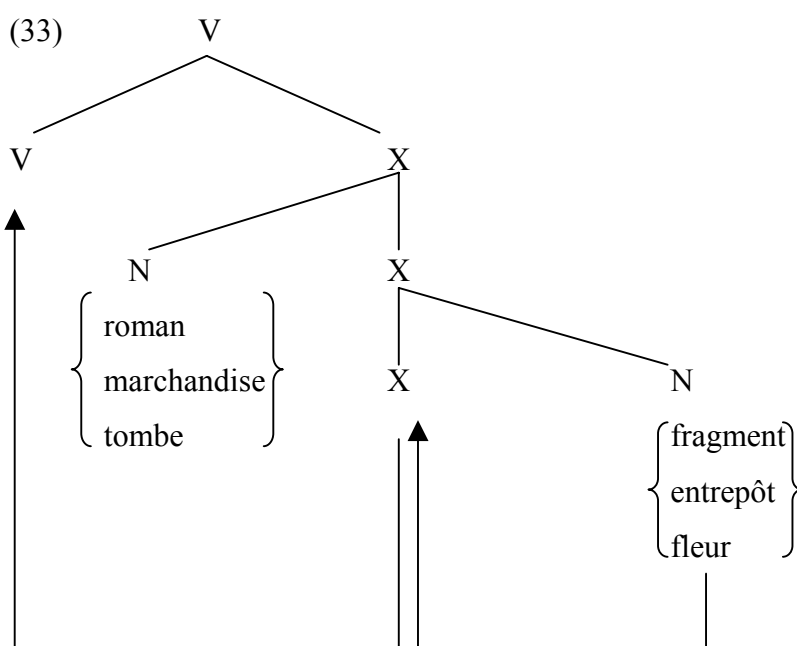
Furthermore, such a free combination of up to five conceptual functions (i.e. *AFFECT*, *CAUSE*, *BE*, {*AT/WITH*}, and *INCH*) is not permitted in Hale and Keyser's (1998) syntactically-based system of LRSs, whose basic types are depicted in 32.

(32) The Structural Types of Lexical Relational Structures. Head (X); complement (Y of X); predicate (X of Z).⁶

a. [_X X Y] b. [_X Z [_X X Y]] c. [_α Z [_α α X]] d. X

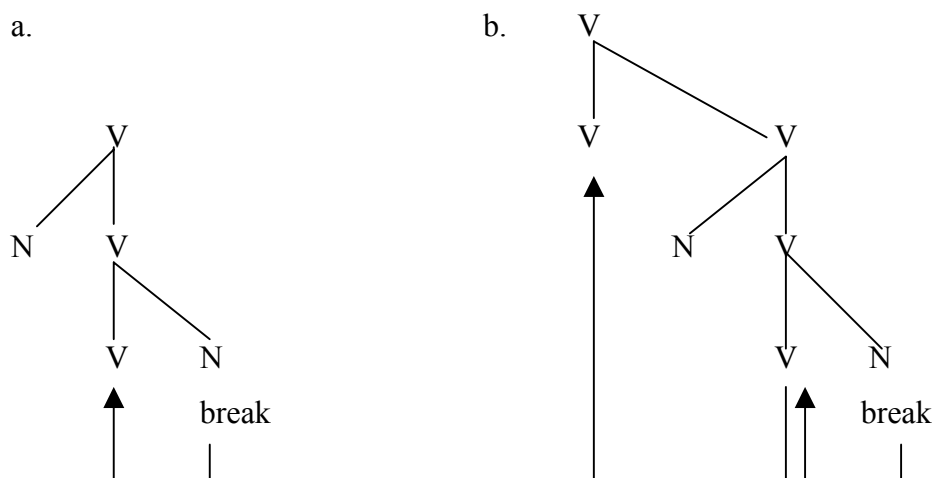
In contrast to Labelle's triple classification, my reductionist proposal is that the three classes of verbs we are analyzing can be assigned a common LRS, the one in 33, which is formed by merging 32b into 32a:⁷ in 33, a verb subcategorizes for a categorially unspecified X, which corresponds to the relational element associated with the abstract terminal coincidence relation, this being the determinant of lexical telicity. I will not discuss here whether the prefix *en-*, which can appear in some Catalan locative and locatum verbs, is to be regarded as the prepositional realization of the X in 33, or as part of the causative verb. The former option is coherent with Gràcia's et al. (2000) morphological analysis, whereas the latter option is taken on by Labelle 1992a.

Moreover, I assume that the appearance of an external argument in the specifier position of the relevant functional category in sentential syntax will provoke the causative interpretation of the verb in 33.



It is important to note that my approach to denominal verbs of change of state also parts ways with Hale and Keyser's (1998: 90) analysis of verbs like *break*: according to them, these verbs are assigned the unaccusative structure in 32c as the basic one (cf. 34a), the causative structure resulting from merging 32c into 32a (cf. 34b).

(34)

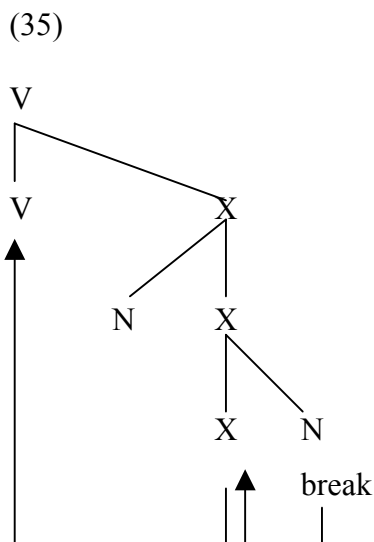


According to Hale and Keyser, the noun *break* can be assumed to have a predicative status, this fact allowing it to occupy the complement position of a host verb (the α head in 32c), which provides it with a specifier position. In other words, the verb *break* is argued to behave as a deadjectival verb with respect to its argument structure properties. Given this, the verb *break* is allowed to enter into the causative/inchoative alternation.

However, as we shall see below, the causative/inchoative alternation cannot be taken as a relevant test for assigning LRSs, because, unlike Hale and Keyser, I think that the existence of such an alternation does not depend on structural or morphosyntactic factors, but rather on semantic/conceptual ones (see Levin and Rappaport Hovav (1995) or Kiparsky (1997), among others).

Once the causative/inchoative alternation is eliminated as a structural criterion, there seems to be no obstacle to posit that the LRS of both unaccusative and causative *break* is the same one, the one in 35, where the categorially unspecified relational element X is to be

associated with the abstract terminal coincidence relation. Crucially, the interpretation of V as causative or inchoative will depend on the presence or absence of an external argument in sentential syntax.



3.2. Towards a minimal LRS theory

The main purpose of this subsection is to pursue a minimal theory of LRSs (cf. 37), where the structural type of 36c has been eliminated. My main motivations for this minimalist move are based on two reasons: on the one hand, I will show that the X in 36c (that is, the Adjective) cannot be granted a primitive status in argument structure theory; on the other hand, I will make it clear that the causative/inchoative alternation cannot be taken as a valid structural criterion in assigning LRSs.

- (36) a. $[_X X Y]$ b. $[_X Z [_X X Y]]$ c. $[_\alpha Z [_\alpha \alpha X]]$ d. X
- (37) a. $[_X X Y]$ b. $[_X Z [_X X Y]]$ c. X

Let us first deal with the first motivation. In particular, my claim is that the lexical head X in 36c is not a primitive element of Lexical Syntax, as in Hale and Keyser's approach, but a composite unit: the argument structure properties of the lexical head X in 36c, whose unmarked morphosyntactic realization in English is the category Adjective, can be argued to be decomposed into two primitive lexical-syntactic elements: I claim that the existence of the category Adjective implies the conflation of a non-relational element like that expressed by

the lexical head Y in 37b, into a relational element like that expressed by the lexical head X in 37b. That is to say, the structural combination in 37b allows us to account for the argument structure properties of Adjectives as well. Accordingly, the argument structure of the **small clause** involved in two sentences like those in 38a,b turns out to be the same, that in 38c.

Quite crucially, I claim that the incorporation of Y into X involved in Adjective formation accounts for both their **relational** character, which adjectives share with the preposition, and their **nominal** properties in languages like Latin, where adjectives are marked with morphological case.

- (38) a. is [the cat [in the room]]
 b. is [the cat [happy]]
 c. is [_X Z [_X 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. For example, in a Jackendovian framework, it would not be unreasonable to assign the Conceptual Structure in 39b to 39a, where a relational element introducing an abstract Place (see *AT* in 39b) can be postulated in quite a natural way. In fact, this extension is clearly expected under the so-called **Thematic Relations Hypothesis** (Gruber 1965), according to which the same conceptual functions we use when dealing with physical space (e.g. *BE*, *AT*, etc.) can also be applied to our conception of abstract space.

- (39) a. The door is open.
 b. [_{State} BE [_{Thing} DOOR], [_{Place} AT [_{Property} OPEN]]]

On the other hand, the parallelism between physical and abstract spatial domains receives in turn further empirical support when considering the crosslinguistic morphosyntactic properties of resultative predicates: for example, not only do Romance languages lack adjectival resultative constructions like the one in 40a, but prepositional ones like the one in 40b are missing in Romance as well.⁸

- (40) a. Joe kicked the door open.
 a'. *El Pep colpejà la porta oberta (Catalan)

The Pep kicked the door open

‘Pep kicked the door open.’

b. Joe kicked the dog into the bathroom.

b’. *El Pep colpejà el gos a dins el bany

The Pep kicked the dog to inside the bathroom

‘Pep kicked the dog into the bathroom.’

The lexical-syntactic element corresponding to the Path relation involved in both prepositional and adjectival resultatives can be argued to be the same, this being explicit in the former, but cover in the latter. If we are willing to maintain that the relevant generalization/parameter accounting for the data in 40 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 generalization or lexical parameter is concerned, the decomposition of adjectival resultatives into two lexical-syntactic elements appears to be justified.

Let us now deal with the second motivation for the move towards the minimal LRS structural types in 37. As noted above, Hale and Keyser would not agree with 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 the merge of 36b into 36a, and the (transitive) deadjectival verbs that involve the merge of 36c into 36a. According to them, this structural distinction explains why the former are always transitive, whereas the latter have a basic intransitive variant, the causative structure being the derived one.

However, as Kiparsky (1997: 497) points out, 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.⁹ Moreover, Romance locative denominal verbs can also be found in unaccusative structures, contrary to Hale and Keyser’s predictions: see the examples in 41.

(41) a. L’helicòpter va aterrar tard. (Catalan)

- the helicopter (to)landed late
 b. L'hydroavió va amarrar tard.
 the hydroplane (to)sea-ed later

Given this, 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 and Keyser propose, but to the fact that they often involve an animate agent. Therefore, the main objection that Hale and Keyser could entertain with respect to our eliminating the apparently basic combination of 36c vanishes into thin air.¹⁰

Before concluding this section, one important caveat is in order: our recognizing that the facts go with the semantics with respect to the causative/inchoative alternation should not be seen as incompatible with our adopting a syntactic approach to argument structure. Rather, the relevant conclusion should be the following: those who are willing to adopt a syntactic approach to argument structure should avoid elaborating complex hypotheses to explain facts that fall out of their program. Such a reflection leads us to some conclusions that can be drawn from the present paper.

4. Conclusions

Semantically-based lexical decomposition accounts of denominal verbs like those reviewed in section 2 appear to be quite unrestrictive when compared to Hale and Keyser's (1993, 1998) lexical-syntactic account. Lexical decomposition is not to be guided by our intuitions on semantic representation but rather by morphosyntactic reasons (Mateu 2000). Obviously, such a claim should not prevent us from taking into account conceptual knowledge in our description of lexical semantics (for example, we have seen that the causative/inchoative alternation forces us to do so). In fact, I think that the apparent chasm between a syntactocentric approach like Hale and Keyser's and a semanticocentric approach like Jackendoff's could be reduced a great deal by recognizing the proper interaction between both components in lexical decomposition.

More particularly, I have claimed that both locative and locatum verbs are to be regarded as causative change of state verbs, whose telicity is determined by the presence of the abstract terminal coincidence relation. The fact that both locative/locatum verbs and deadjectival verbs are change of state verbs has led us to consider the notion of **state** as a non-primitive element of the LRS theory.

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¹ Jackendoff (1990: 170) points out that locative verbs like *pocket* can be analyzed as INCH(oative)-verbs as well. By contrast, locatum verbs like *butter* are more appropriately analyzed as INCH verbs (cf. ‘cause *butter* to come to be all over’).

² See Moreno and Romero (2000: 152-154) for some arguments in favor of an analysis of Spanish locatum verbs (e.g., *ensillar* ‘to saddle’) as involving incorporation of the Theme argument (*silla* ‘saddle’) from a specifier position. Because of reasons of space, I will not review their analysis here.

³ One caveat is in order here: when a bare plural appears in the direct object position of telic verbs like *saddle* or *shelve*, the event receives an interpretation of repeated events of saddling (cf. i) or shelving (cf. ii), **each repeated event being completed**. Accordingly, notice that, in spite of the modification of the aspectuality involved in i-ii, the completeness or telicity effect associated to their innermost LRS predicate is preserved.

(i) John saddled horses for two hours.

(ii) John shelved books for two hours

⁴ See Harley (1999) for related discussion.

⁵ SE/ES-sentences with atelic verbs are ungrammatical on the middle reading, but grammatical on the irrelevant pronominal passive reading (e.g. *els cavalls es van empènyer per tal de...* (i.e. ‘the horses were pushed in order to...’)).

Concerning the examples in 19-21, I have used clitic left dislocation structures in order to avoid the attributive reading of the adjective.

⁶ The prototypical morphosyntactic realizations of X in English are: V in 32a, P in 32b, Adj in 32c, and N in 32d.

⁷ Following Hale and Keyser (1998), I assume that denominal 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. a head-complement configuration.

⁸ 40a' and 40b' are grammatical on the following irrelevant readings: 40a' is grammatical if the adjective is interpreted as attributive: i.e. 'the open door'; 40b' is grammatical if the PP has a locative, non-directional reading: i.e. 'the kicking took place inside the bathroom'.

⁹ According to Kiparsky (1997: 497), "denominal verbs do participate in the causative/inchoative alternation if they denote events which can proceed on their own (*caramelize, shortcuit, carbonize, gasify, weather*). This is also true for location verbs, such as those denoting mechanical processes which are understood as capable of proceeding on their own (*reel, spool, stack, pile (up)*), and the positioning of self-propelled vehicles (*dock, berth, land*) or of persons (*bed, billet, lodge*)".

¹⁰ On the other hand, it is also important to keep in mind that there are deadjectival verbs like *legalize, visualize*, etc., which can not participate in the causative/inchoative alternation, contrary to Hale and Keyser's predictions again. Similarly, Levin and Rappaport Hovav's (1995: 104-105) examples in i-ii also show that the licensing of the verb in the causative/inchoative alternation appears to be more dependent on semantic conditions rather than on morphosyntactic ones:

- (i) a. The dressmaker lengthened the skirt.
b. *The skirt lengthened.
c. The mad scientist lengthened the days.
d. The days lengthened.

- (ii) a. The waiter cleared the table.
b. *The table cleared.
c. The wind cleared the sky.
d. The sky cleared.