

JAUME MATEU I FONTANALS

**ARGUMENT STRUCTURE: RELATIONAL CONSTRUAL
AT THE SYNTAX-SEMANTICS INTERFACE**

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TABLE OF CONTENTS	iii
Abstract	v
Resum	vi
Chapter 1. The relational syntax and semantics of argument structure	1
1.1. Hale & Keyser's (1998, 1999a) syntactic theory of argument structure.....	1
1.2. Locative and locatum verbs revisited. Evidence from Romance.....	6
1.2.1. Introduction.....	7
1.2.2. Three semantic approaches: Pinker (1989), Jackendoff (1990), and Labelle (2000).....	8
1.2.3. Hale & Keyser's (1998) lexical syntactic analysis revisited.....	11
1.3. On the non-primitive status of argument structure properties of 'Adjectives'.....	24
1.4. Argument structure meets homomorphism.....	28
1.5. Towards a syntactically transparent semantic composition: The basics revisited.....	44
1.6. Concluding remarks.....	61
Appendix: Refuting some criticisms against syntactically transparent lexical decomposition.....	63
Chapter 2. Unaccusativity: A relational syntactic and semantic approach	77
2.1. The Unaccusative Hypothesis.....	77
2.2. Auxiliary selection revisited.....	84
2.2.1. Aux-selection and semantic proto-roles.....	98
2.2.2. Aux-selection and gradiency effects.....	106
2.2.3. Aux-selection and <i>ne/en</i> -cliticization: Burzio's (1986) correlation regained.....	119
2.2.4. Aux-selection and linking rules.....	124
2.3. Unaccusativity extended: On the complex argument structure of the progressive construction.....	134
2.3.1. Bolinger's (1971) remarks on the English progressive.....	136
2.3.2. On the relational syntax and semantics of the progressive construction.....	139
2.3.3. Two alternative formal approaches to the progressive construction.....	145
2.4. Conclusions.....	150

Chapter 3. Conflation processes and the elasticity of verb meaning.....151

3.1. Satellite-framed vs. verb-framed languages: A relational syntactic and semantic approach.....151

3.1.1. Lexicalization patterns and the elasticity of verb meaning.....152

3.1.2. Semantic approaches to complex resultative constructions.....154

3.1.3. Conflation processes in complex telic Path of motion constructions and resultative constructions: A relational syntactic and semantic account.....158

3.1.4. On some apparent counterexamples to Talmy's (1985, 1991) typology.....182

3.2. Conflation processes in complex denominal verbs.....190

3.2.1. Stiebels's (1998) LDG analysis of complex denominal verbs in German.....192

3.2.2. On the morphological structure of complex denominal verbs.....193

3.2.3. Complex denominal verbs and 'Lexical subordination'.....195

3.2.4. Concluding remarks.....205

3.3. Conflation processes and the locative alternation.....206

3.3.1. The lexical-semantic approach.....206

3.3.2. On the relational syntax and semantics of the locative alternation.....210

3.3.3. Lexicalization patterns and the locative alternation.....218

3.4. Conclusions.....227

Chapter 4. Arguing our way to the *Direct Object Restriction* on resultative constructions 229

4.1. On the DOR on resultative constructions.....229

4.2. The *way*-construction: A relational syntactic and semantic account.....239

4.2.1. Some previous approaches.....241

4.2.2. On the relational syntax and semantics of the *way*-construction.....247

4.3. Regaining the DOR: Some counterexamples revisited.....258

4.4. Conclusions.....272

Chapter 5. Climbing to the end.....273

5.1. Jackendoff's conceptual approach to 'multiple argument structures': The case of *climb*....274

5.2. The basic elements of argument structure.....275

5.3. Argument structure and lexical decomposition: The case of *climb* revisited.....280

5.4. Epilogue.....299

References.....303

Abstract

This thesis deals with the relational syntax and semantics of argument structure. Special attention is paid to the relation between argument structure and lexical decomposition: a minimal decomposition of lexical items like *to saddle* or *to break* is argued to be necessary in order to elucidate their complex relational structures.

In chapter 1 I put forward the hypothesis that there is a strong homomorphism between the relational syntax and semantics of argument structure. This hypothesis is shown to gain theoretical support *iff* a fundamental distinction is drawn: meaning is a function of both non-syntactically transparent *conceptual content* and syntactically transparent *semantic construal*. Accordingly, a syntactically transparent approach to semantic composition is adopted in the present framework, which partakes in both Hale & Keyser's (1998, 1999a) syntactic theory of the basic argument structure types and Mateu's (1999) semantic theory of argument structure, which assumes that certain meanings are associated to certain structures.

In chapter 2 I analyze the relational syntax and semantics of unaccusative and unergative verbs. The present analysis of unaccusativity is exemplified with two different case studies: Firstly, I provide a formal account of the relational semantic determinants of 'aux-selection' in languages like Italian and French. Secondly, I argue that the progressive construction can be analyzed as involving a locative unaccusative structure over that argument structure lexically associated to the verbal predicate.

In chapter 3 I put forward a relational syntactic and semantic account of the crosslinguistic variation involved in the so-called 'elasticity of verb meaning' (Rappaport Hovav & Levin 1998). Such a variation is argued to be related to Talmy's (1985, 1991, 2000) typological distinction between 'satellite-framed languages' and 'verb-framed languages'. In particular, I analyze two constructions that are typical of satellite-framed languages like English, Dutch or German: complex telic path of motion constructions and complex resultative constructions. I also show why these constructions are impossible in verb-framed languages like Catalan or Spanish. Moreover, I provide an explanation of why certain classes of complex denominal verbs and some cases of locative alternation are more productive in satellite-framed languages rather than in verb-framed ones.

In chapter 4 I argue my way to the conclusion that the so-called 'Direct Object Restriction' (DOR) on resultative constructions, which has been recently called into question by Rappaport Hovav & Levin (2001), must be regained. In this chapter I also put forward a relational syntactic and semantic analysis of the so-called *way*-construction, showing that, despite appearances, such an idiomatic construction does not violate the DOR either.

Chapter 5 provides an extensive recapitulation of some relevant theses worth being drawn from the present work. I exemplify them by providing a relational syntactic and semantic analysis of one of my favorite case studies: i.e., the verb *climb*.

CAVEAT: Chapter 5 is mainly intended for that reader who does not want to spend time reading a 300-pages work on lexical decomposition issues, but nonetheless wants a very detailed summary of it.

Resum

Aquesta tesi tracta de les propietats relacionals de la sintaxi i la semàntica de l'estructura argumental. En especial, estudio la relació entre l'estructura argumental i la descomposició lèxica: defenso que una descomposició mínima dels elements lèxics (e.g., *ensellar* o *trencar*) és necessària si es vol donar compte de les seves estructures relacionals complexes.

Al capítol primer s'hi proposa la hipòtesi teòrica principal segons la qual hi ha un homomorfisme important entre la sintaxi i la semàntica relacionals de l'estructura argumental. Demostro que a aquesta hipòtesi se li pot donar una base teòrica si i només si es fa la distinció langackeriana següent: el significat és una funció del contingut conceptual i de la construalitat semàntica. En introduir aquesta distinció en el paradigma generativista, argumento que només la construalitat semàntica es codifica de manera transparent a la sintaxi. Poso també especial èmfasi a fer veure que la meua aproximació a l'estudi de l'estructura argumental participa tant de la teoria sintàctica de Hale i Keyser (1998, 1999a) com de la teoria semàntica de Mateu (1999).

Al capítol segon s'hi analitzen les propietats relacionals de la sintaxi i la semàntica dels verbs inacusatius i inergatius. Exemplifico la meua anàlisi de la 'inacusativitat' amb l'estudi de dos casos diferents: en primer lloc, faig una explicació formal dels aspectes semàntics relacionals que determinen la selecció d'auxiliar en llengües com l'italià i el francès; en segon lloc, defenso que l'anàlisi de la construcció progressiva implica una estructura inacusativa locativa que domina l'estructura argumental que està lèxicament associada al predicat verbal.

Al capítol tercer s'hi estudien les propietats relacionals de la sintaxi i la semàntica de l'anomenada 'elasticitat del significat verbal' (Rappaport Hovav i Levin 1998). Es demostra que la variació lingüística que afecta aquest fenomen està relacionada amb la distinció tipològica de Talmy (1985, 1991, 2000) entre llengües d'emmarcament en el satèl·lit com l'anglès, l'alemany o el neerlandès, i llengües d'emmarcament en el verb com el català, l'espanyol o el francès. S'hi analitzen de manera detallada la sintaxi i la semàntica relacionals de dues construccions que són típiques de les llengües d'emmarcament en el satèl·lit: les construccions de moviment que inclouen un verb de manera de moviment i un trajecte fitat, i les construccions resultatatives complexes. Poso especial èmfasi a demostrar per què en català no existeixen aquestes construccions. Faig veure també per què en català no existeixen determinats verbs denominals complexos ni certs casos d'alternances locatives, que són més aviat típics de llengües germàniques com l'alemany o el neerlandès.

Al capítol quart s'hi estudia l'anomenada 'restricció d'objecte directe' en les construccions resultatatives de l'anglès. Tot i que s'ha posat en dubte aquesta restricció (e.g., vegeu Rappaport Hovav i Levin 2001), faig veure les raons per les quals cal recuperar la validesa d'aquesta restricció. En aquest capítol s'hi analitza també la sintaxi i la semàntica relacionals d'una construcció idiomàtica de l'anglès que té un correlat molt directe amb les construccions resultatatives: i.e., la "way-construction". Demostro també per què aquesta construcció no transgredeix la 'restricció d'objecte directe', tot i que ho pugui semblar a primer cop d'ull.

Al capítol cinquè s'hi fa un resum força extens de les tesis més rellevants que un hom pot extreure d'aquest treball. Aquestes tesis les exemplifico a partir de l'anàlisi de la sintaxi i la semàntica relacionals d'un dels meus casos d'estudi preferits: el verb *climb*. Cal advertir que aquest capítol està pensat per a aquell lector (cada vegada més freqüent!) que vol saber amb un cert detall de què tracta la tesi, però que no té temps per a llegir-se-la tota.

Chapter 1. The relational syntax and semantics of argument structure

In this chapter I put forward a theory of argument structure based on a fundamental distinction drawn by Mateu & Amadas (2001): namely, meaning is a function of both non-syntactically transparent conceptual content and syntactically transparent semantic construal. I show that our assuming such a crucial distinction allows us to avoid both Hale & Keyser's (1998, 1999a) pitfalls derived from their syntactocentric approach to argument structure and Jackendoff's (1990) ones derived from his semanticocentric approach. In section 1.1. Hale & Keyser's (1998, 1999a) syntactic theory of argument structure is sketchily presented. Section 1.2. offers an extended revision of their analysis of locative and locatum verbs. In Section 1.3. I show the non-primitive status of adjectives with respect to their argument structure properties. The main section of this chapter, i.e, section 1.4, presents the main theoretical assumption on which this thesis is based: i.e., there is a strong homomorphism between the syntax and semantics of argument structure configurations. Crucially, this proposal is argued to gain theoretical plausibility *iff* the fundamental distinction alluded to above concerning what meaning is, is taken into serious account. In section 1.5 I refute some of the main criticisms leveled by Jackendoff (1990, 1997a) against syntactically transparent approaches to semantic composition. I also argue for the descriptive validity of Chomsky's (1981f) Theta-Criterion and Baker's (1988, 1997) UTAH. Both principles are shown to have a derived (i.e., non-primitive) status in the present theory of argument structure. Finally, in the appendix I show that Fodor's (1970) well-known arguments against lexical decomposition do not carry over to the framework assumed here. Moreover, I review Jackendoff's (1997a) criticisms of Hale & Keyser's (1993) theory of L(exical)-syntax.

1.1. Hale & Keyser's (1998, 1999a) syntactic theory of argument structure

Argument structure is conceived of by Hale & Keyser (1999a: 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,

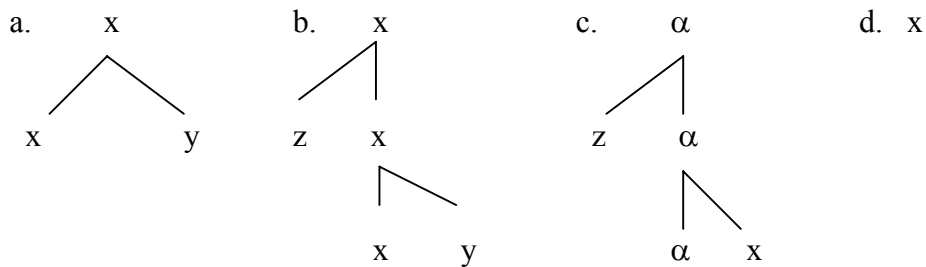
as part of their entries in the lexicon. Although a lexical entry is much more than this, of course, argument structure in the sense intended here is precisely this and nothing more”.

Their main assumptions, expressed informally, are those embodied in (1):

- (1) “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”. Hale & Keyser (1999a: 454)

A given head (i.e., x in (2)) may enter into the following structural combinations in (2): “these are its argument structure properties, and its syntactic behavior is determined by these properties” (cf. Hale & Keyser (1999a: 455)).

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

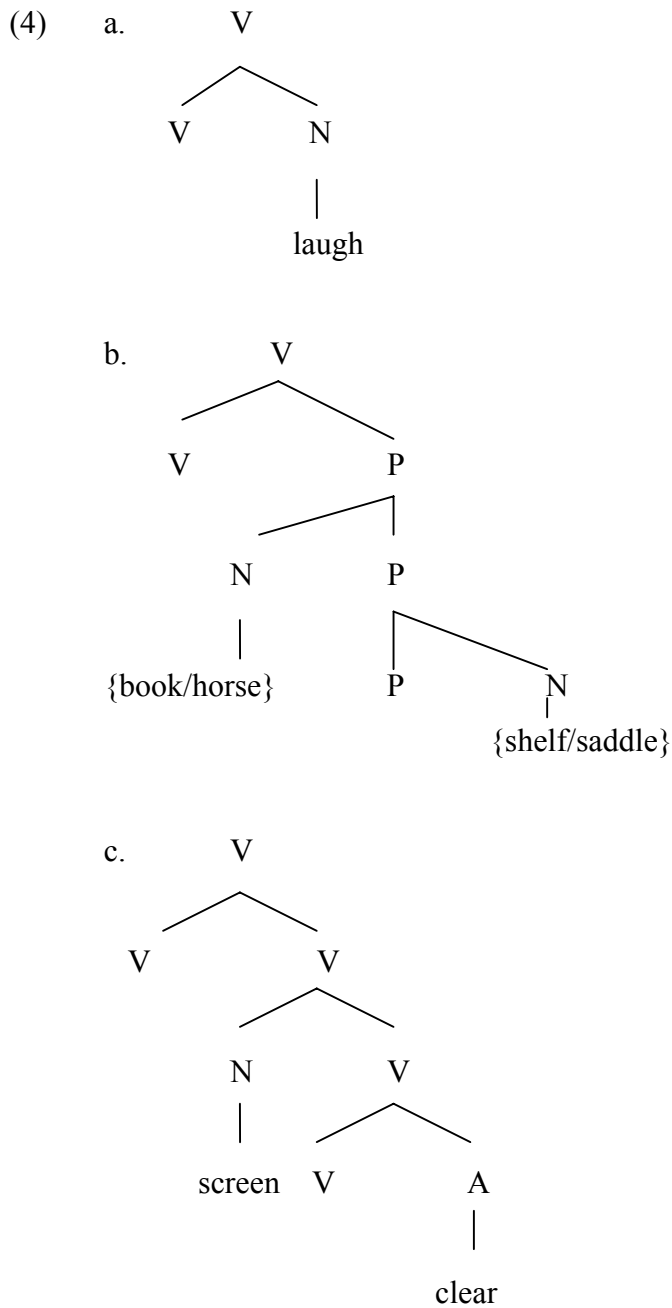


According to Hale & Keyser, the prototypical or unmarked morphosyntactic realizations in English of the syntactic heads in (2) (i.e., the x 's) are the following ones: V in (2a), P in (2b), A in (2c), and N in (2d).

The main empirical domain on which Hale & Keyser's hypotheses have been tested includes denominal verbs (so-called unergative verbs like *laugh* (cf. (3a)), transitive locative verbs like *shelve* (cf. (3b)), or locatum verbs like *saddle* (cf. (3c)), and deadjectival verbs (e.g., *clear* (cf. (3d))).

- (3) 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 non-relational element (typically, a noun) with a verbal head (cf. (2a)): see (4a); both locative verbs (e.g., *shelve*) and locatum verbs (e.g., *saddle*) involve merging the structural combination in (2b) into the one of (2a): see (4b). Finally, transitive deadjectival verbs also involve two structural combinations, i.e., that depicted in (2c) is merged into the one in (2a): see (4c).



Hale & Keyser propose the same argument structure configuration for both locative and locatum verbs. The main difference between them is a semantic one: the

P involved in the argument structure of (3b) is a ‘terminal coincidence relation’ (cf. *John put the book onto the shelf*), while the P involved in the argument structure of (3c) is a ‘central coincidence relation’ (cf. *John provided the horse with a saddle*).⁷ In section 1.2 below, I will argue for a different semantic analysis of locatum verbs.

Locative and locatum verbs are said to be transitive (cf. **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: cf. *the screen cleared*), since their inner V-projection can occur as an autonomous predicate.

Furthermore, as justified in Hale & Keyser (1993f), the external argument of transitive constructions (unergatives included) is argued to be truly external to the argument structure configuration. It can be said to occupy the specifier position of a functional projection in s(entential)-syntax.⁸ Alternatively, the external argument can be argued to be “structurally an adjunct to the VP and, moreover, a ‘distinguished adjunct’ coindexed with the VP” (Hale & Keyser (1998: 75)).

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.⁹ If Conflation can be argued to be concomitant of Merge (Hale & Keyser (1998f.)), the argument structures in (4) turn out to be quite abstract since they have been depicted as abstracted away from the conflation processes involved in the examples in (3). Applying the conflation operation to (4a) involves copying the full phonological matrix of the noun *laugh* into the empty one corresponding to the verb. Applying it to (4b) involves two steps: the full phonological matrix of the noun {*shelf/saddle*} is first copied into the empty one corresponding to the

⁷ See Hale (1986) for the distinction between central vs. non-central (i.e., terminal) coincidence relations.

⁸ Cf. Hale & Keyser (1998: 75; fn. 2): “The term ‘sentential syntax’ is used here to refer to the syntactic structure assigned to a phrase or sentence involving both the lexical item and its arguments and also its ‘extended projection’ (cf. Grimshaw (1991)) and including, therefore, the full range of functional categories and projections implicated in the formation of a sentence interpretable at PF and LF. The internal structure of a lexical projection is also properly speaking a ‘syntax’, but it is the structure included within the projection of the lexical head and is defined strictly in terms of heads and arguments”.

⁹ Conflation from a specifier position is not a possible operation (cf. Hale & Keyser (1993f.)).

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 (4c) 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.

On the other hand, it is important to keep in mind that, as shown in (5), both aspects of their theory of argument structure relations, the syntactic and the lexical, are considered in no way incompatible by Hale & Keyser:

- (5) a. “Our conservative position holds that the lexical entry of an item consists in the syntactic structure that expresses the full system of lexical grammatical relations inherent in the item”.

Hale & Keyser (1993: 98)

- b. “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* <emphasis added: JM>. Although a lexical entry is much more than this, of course, argument structure in the sense intended here is precisely this and nothing more”.

Hale & Keyser (1999a: 453)

- c. “Conflation is a lexical matter in the sense that denominal verbs, and deadjectival verbs as well must be listed in the lexicon. Although their formation has a syntactic character, as we claim, they constitute part of the lexical inventory of the language. *The two characteristics, the syntactic and the lexical, are in no way incompatible* <emphasis added: JM>”.

Hale & Keyser (1999a: 453)

Notice that adopting the conservative position quoted in (5a) leads Hale & Keyser to posit the existence of phrasal projection in the lexicon. In order to avoid

such a potential contradiction, Uriagereka (1998a) argues that those structures given in (4) above are not lexical representations, but syntactic structures corresponding to lexical representations, after they are selected from the numeration. For example, Uriagereka (1998a: 438) points out that (6) is to be regarded as the actual lexical representation of the denominal verb *saddle* that determines the syntactic argument structure in (4b). According to him, “the features in question are purely combinatorial markings, uninterpretable formal features of words like *saddle* and *shelve* that are idiosyncratic to each of these verbs” (p. 434).¹⁰

$$(6) \quad \begin{pmatrix} -N \\ +V \\ F-P \\ \dots \end{pmatrix} \begin{pmatrix} -N \\ -V \\ v-F \\ F-N \\ \dots \end{pmatrix} \begin{pmatrix} +N \\ -V \\ P-F \\ \dots \end{pmatrix}$$

[e.g., v + P + saddle] Uriagereka (1998a: 438)

Since the analyses to be presented below do not crucially hinge on assuming Uriagereka’s ‘feature-based’ refinements such as those in (6) to derive argument structures like the one in (4b), I will omit such a discussion here. As far as I can see, the analyses to be presented below can be regarded as compatible with both Hale & Keyser’s and Uriagereka’s ways of constructing syntactic(ally transparent) argument structures.

1.2. Locative and locatum verbs revisited. Evidence from Romance

In this section I revise Hale & Keyser’s (1998) lexical relational analysis of two classes of denominal verbs, the so-called locative and locatum verbs (cf. Clark & Clark (1979)). Evidence from Romance languages (mainly from Catalan) will be presented below in order to show why such a modification is necessary. To advance the main proposal, I claim that these denominal verbs can be regarded as ‘causative change of state verbs’, whose (lexical) telicity is derived from the presence of an

¹⁰ The abbreviations in (6) are used by Uriagereka (1998a: 434-438) to mean the following:

(i)	F-P	=	feature-P	(i.e., “a-Prep-incorporates-into-me”)
	v-F	=	v-feature	(i.e., “I-incorporate-into-v”)
	F-N	=	feature-N	(i.e., “a-Noun-incorporates-into-me”)
	P-F	=	P-feature	(i.e., “I-incorporate-into-P”)

abstract terminal coincidence relation, the same relation that will be postulated for telic deadjectival verbs. Pursuing the consequences of such a hypothesis will lead me to posit a theoretically desirable reduction of the basic argument structure types (cf. section 1.3).

1.2.1. Introduction

First let us describe the data. Locative verbs like those in (7) are formed on a noun which corresponds to the final location of some entity, this located entity occupying the direct object position. On the other hand, locatum verbs like those in (8) are formed on a noun which corresponds to the displaced object (i.e., the 'locatum' object), the location occupying the direct object position.

- (7) a. Ell engabià el seu ocell preferit. N = gàbia 'cage' (Catalan)
 he (in)caged the his bird favorite
- b. Ell empaquetà els llibres. N = paquet 'packet'
 he (in)packed the books
- c. Ella embotellà el vi. N = botella 'bottle'
 she (in)bottled the wine
- (8) a. Ella ensellà el cavall. N = sella 'saddle' (Catalan)
 she (in)saddled the horse
- b. Ell enfarinà els pastissos. N = farina 'flour'
 he (in)floured the cakes
- 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 linguists working on localist theories of semantics have constantly paid primary attention to these verbs. My main purpose in the following section (section 1.2.2) is to provide the necessary background on some localist approaches to these verbs. As shown below, it is precisely Labelle's (2000) semantic account of these verbs that will be taken as the main starting point of the present analysis.

1.2.2. Three semantic approaches: Pinker (1989), Jackendoff (1990), and Labelle (2000)

Being inspired by Rappaport & Levin’s (1988) analysis of locative alternation, Pinker (1989) posits that location verbs (for example, *pocket*) are lexically associated to the semantic template of (9a) (see (9b)), whereas locatum verbs (for example, *butter*) are lexically derived by means of the ‘lexical subordination process’ depicted in (10a): see (10b).

- (9) a. x CAUSE [y GO TO z]
 b. x CAUSE [y GO TO *pocket*]
- (10) 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]]

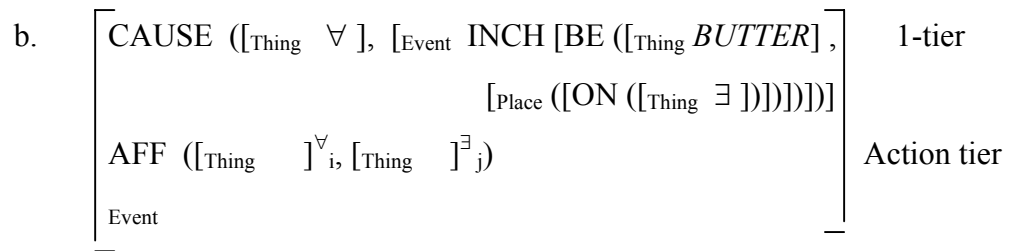
Pinker (1989), *apud* Labelle (2000: 216)

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. (11a)), but it is the Theme in locatum verbs (cf. (11b)). As a result, the linking or correspondence between the thematic tier and the action tier is different in each case: in (11a), the Theme is associated to the second role of AFF (‘Affect’), that is, to the patient role, whereas in (11b) 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.¹¹

- (11) a.

CAUSE ([Thing \forall], [Event GO ([([Thing \exists],	1-tier
[Path TO ([Place IN ([Thing <i>POCKET</i>)]))])])]	
AFF ([Thing \forall] _i , [Thing \exists] _j)	Action tier
Event	

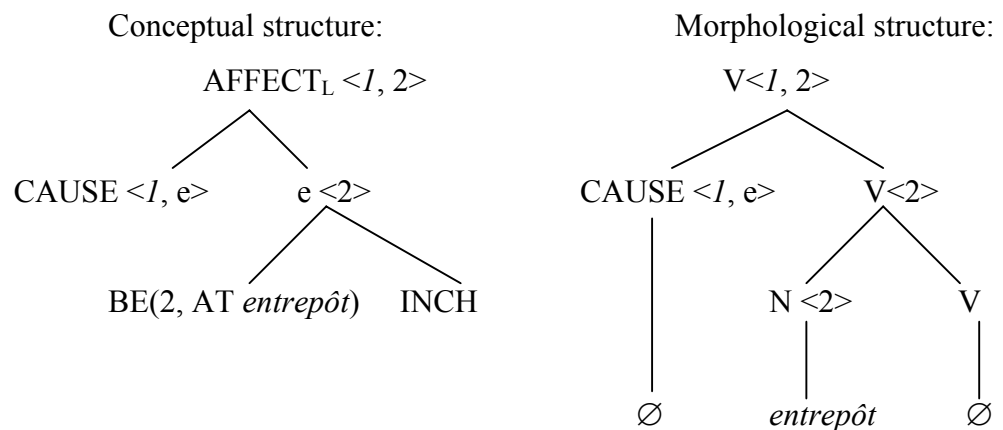
¹¹ Jackendoff (1990: 170) points out that locative verbs like *pocket* could be analyzed as INCH(oative)-verbs as well.



Jackendoff (1990), *apud* Labelle (2000: 217-219)

Quite importantly, one insightful criticism that can be found in Labelle (2000) 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 (2000), the difference between these verbs is that locative verbs like Fr. *entreposer* ('to warehouse') incorporate a locative relation (cf. *AT* in (12a)), whereas locatum verbs like Fr. *fleurir* ('to cover with flowers') incorporate a possessive relation (cf. *WITH* in (12b)). 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.

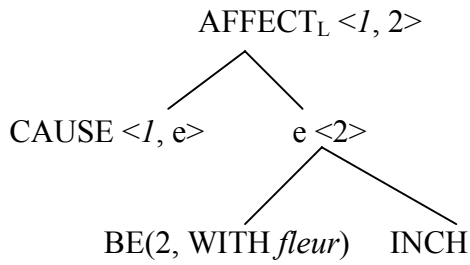
(12) a. *entreposer* ('to warehouse')¹²



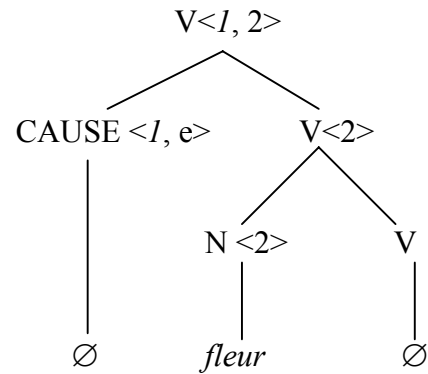
¹² Cf. Fr. *Max a entreposé les marchandises dans un couloir* ('Max stored the merchandise in a corridor'); example taken from Guillet & Leclère (1981), *apud* Labelle (2000).

b. fleurir ('cover with flowers')¹³

Conceptual structure:



Morphological structure:



Labelle (2000: 227-229)

It seems to me 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 how the subpart of linking shown in (13) is to be carried out: it is simply stipulated.

- (13) 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: for example, notice that they are not all justified by morphosyntactic reasons. It is then 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) for relevant critical remarks).

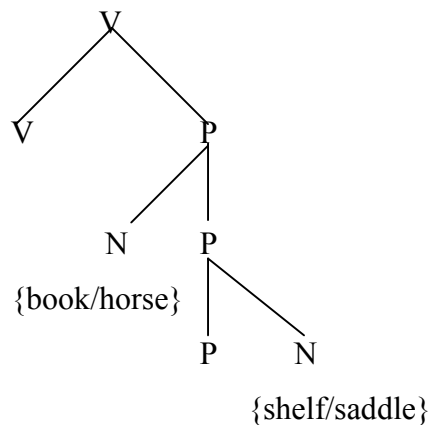
¹³ Cf. Fr. *Jean a fleuri la tombe de géraniums* (lit. 'John flowered the tomb with geraniums'); example taken from Guillet & Leclère (1981), *apud* Labelle (2000).

This could then lead one to try to pursue an explanation of locative and locatum verbs in another different framework, that put forward by Hale and Keyser (1998, 1999a), where the lexical decomposition of these verbs is carried out on the basis of restricted and well-established syntactic principles. Of course, there is another well-known alternative, the one pursued by Fodor and its followers, according to which words do not have internal structure, an alternative I will not review here.¹⁴

1.2.3 Hale and Keyser's (1998) lexical syntactic analysis revisited

According to Hale and Keyser (1998), both locative and locatum verbs are derived from the lexical syntactic structure in (4b), repeated below in (14).¹⁵ The non-relational elements *shelf* and *saddle* undergo head-to-head movement to the prepositional node, which in turn raises to the empty verb, yielding the surface form.

(14)



As noted above, Hale and Keyser (1998) posit that the only difference to be found between locative verbs (cf. *John shelved the book*) and locatum verbs (cf. *John saddled the horse*) concerns the semantic value of the preposition in (14): the preposition conflated into the verb *shelve* is a ‘terminal coincidence relation’, which

¹⁴ See Fodor and Lepore (1999), and Hale and Keyser (1999a) for their corresponding reply. Cf. section 1.4 below for some remarks on Fodor’s & Lepore (1999) critique of Hale & Keyser (1993).

¹⁵ See Moreno & Romero (2000) for an analyses of Spanish locatum verbs (e.g., *ensillar* ‘to saddle’) as involving incorporation of the “Theme” argument (*silla* ‘saddle’) from a specifier position. Unlike them, I will assume, along with Hale & Keyser (1998, 2000a), that the formation of argument structures is incompatible with the conflation from a specifier position.

also appears in its analytic paraphrase *John put the book onto the shelf*, whereas the one conflated into the verb *saddle* is a ‘central coincidence relation’, which is argued to be visible in its corresponding analytic paraphrase *John provided the horse with a saddle*. According to Hale (1986), 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.

However, despite its initial plausibility, I will show that Hale & Keyser’s analysis of the semantic value of the P in (14) 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 the present section. Although I agree with Hale and Keyser in their semantic analysis of the P conflated in locative verbs, I part ways with them when analyzing the semantics of the P conflated in locatum verbs.

More generally, I want to argue that the semantic 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 aspectual notions of (lexical) ‘telicity’ and (lexical) ‘atelicity’, respectively. Accordingly, the argument structure of telic locative and locatum verbs will be argued to contain a terminal coincidence relation, while that of atelic verbs (e.g., transitive verbs of contact like *push* or instrumental verbs like *brush*) will be argued to contain a central coincidence one. Concerning telic locative and locatum verbs, the data to be presented in the present section will be put forward to support my hypothesis that these verbs involve the abstract terminal coincidence relation that can be argued to be implicated in any telic change of state verb.

Before dealing with this issue, let us see if a lexical relational approach to locative verbs like that put forward by Hale & Keyser has more explanatory power than those previously reviewed semantic approaches. Undoubtedly, one of the most attractive qualities of Hale & Keyser’s approach is their principled answer to the limits of argument structure (cf. Hale & Keyser (1997a)), 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 syntactic argument structure of locative verbs in (14) is assumed to implicate only two relational predicates V and P, which can be argued to be semantically associated to a dynamic predicate and a terminal coincidence relation, respectively. Other arguable relational predicates like those found in Labelle's semantic analysis in (10) (e.g., *BE* or *INCH*(oative)) do not appear to have morphological or syntactic motivation, and are thereby excluded from the structural representation of (14). Given this, notice 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, who tried to syntacticize semantic intuitions or encyclopedic knowledge. Intuitions and background knowledge are put aside, and only linguistic facts must be taken into account when doing lexical decomposition (cf. also Bouchard (1995) for related discussion on similar issues).

With these previous remarks in mind, let us deal with the modification of Hale & Keyser's analysis of locatum verbs. As pointed out above, my hypothesis is that both locative and locatum verbs can be argued to contain the terminal coincidence relation that can be associated to telic change of state verbs. First of all, notice that locatum verbs, which are argued to contain a central coincidence relation by Hale & Keyser, behave as telic predicates in the Catalan examples in (15). Unlike Hale & Keyser, I claim that the central coincidence relation is only to be found in atelic predicates: for example, see those in (16), the central coincidence preposition being visible in (16a) or invisible in (16b).

- (15) a. *Ella ensellà el cavall* {*/durant/en} cinc segons. (Catalan)
 she (in)saddled the horse {*/for/in} five seconds
 b. *Ell ferrà les eugues* {??durant/en} deu minuts.
 he shoed the mares {??for/in} ten minutes
- (16) a. *En Joan es va estar amb la Maria* {durant/*en} vint anys.
 Joan ES stayed with Maria {for/*in} twenty years
 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 contain a terminal coincidence relation, they are expected to behave like those locatum verbs in (15). This prediction is borne out, as shown in (17).¹⁶

- (17) a. En Joan encaixà cinc morts {*durant/en} dos minuts.
 Joan (in)boxed five dead (men) {*for/in} two minutes
 b. L'helicòpter aterrà a la pista {*durant/en} cinc minuts.
 the helicopter (to)landed loc.prep. the runway {*for/in} five minutes

Let us now concentrate on the data in (18a), which exemplifies a locatum verb like *enfarinar* ('to flour'), and (18b), which exemplifies 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 (18a) is due to factors which are different from those involved in (18b). Concerning the latter, i.e. (18b), I claim that its atelic reading is to be related to that corresponding to its analytic paraphrase in (18c): the verb *mantenir* ('to keep') can be argued to select a central coincidence relation in contexts involving a kind of 'static causation' like the one implicated in (18c).

- (18) 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 cinc hores.
 he kept {(in)caged/in the cage} the his bird favorite for five hours

¹⁶ One caveat is in order here: whenever 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* (see also Rosen (1996)). Accordingly, notice that, in spite of the modification of the telicity involved in (i-ii), the completeness effect associated to their lexical entry is preserved. See Verkuyl (1972, 1993) or Jackendoff (1996), among many others, for relevant discussion concerning the interaction of bare plurals with lexical aspect.

(i) John saddled horses for two hours.
 (ii) John shelved books for two hours.

On the other hand, I think that the atelic reading of (18a) is due to a different phenomenon, which is presumably related to the one involved in the atelic reading of the change of state variant of some locative alternation verbs like *spray* (cf. (19)).

- (19) 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, notice 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 seems to be involved in (18a). In this sentence, the conceptual displaced object is not a bounded object as it is in (15a) (cf. Harley (1999, 2001)), but we are dealing with the mass noun *farina* ‘flour’, which can be put onto the meatballs as many times as we wish.

Examples like those in (19) 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 in principle combine only with temporal frame adverbials but not with durational adverbials.

However, unlike Brinkmann, I do not think that Pinker’s descriptive generalization must be abandoned, since in any case the change of state undergone by the direct object *la paret* (‘the wall’) in (19) or *les mandonguilles* (‘the meatballs’) in (18a) must be linguistically differentiated from what happens in a sentence like the one in (16b). For example, it is not accidental that adjectival passives with the perfective verb *estar* (perfective ‘be’) in (20a) and (20b) are always entailed from the atelic reading of (19a) and (18a), respectively, whereas such an entailment cannot be drawn from (16b) (cf. (20c)).

- (20) 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 (16b) and the atelicity of (18a) and (19) must be attributed to different reasons: the atelicity of the former must be related to the presence of a central coincidence relation, while the atelicity of the latter must be attributed to the coercion effects derived from the interaction of the conceptual manner component associated to the action with the *unbounded* nature of the mass term involved.¹⁷

On the other hand, it is important to stress the fact that the analysis of locatum verbs as involving an abstract terminal coincidence relation allows us to account for the wellformedness of the ‘Middle Formation’ examples in (21), and the ‘Secondary Predication’ examples in (24), since these two tests have been considered as typical of change verbs that have a *terminus* involved. According to Rapoport (1993), 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 are argued to contain a terminal coincidence relation, with atelic verbs like *empènyer* (‘to push’) or *perseguir* (‘to chase’), which are argued to contain a central coincidence relation. As expected, only the former verbs can partake in the Middle construction and the Secondary Predication construction, while the latter cannot.¹⁸

¹⁷ See Harley (1999, 2001) for related discussion.

¹⁸ *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 (24-26), I have used clitic left dislocation structures in order to avoid the attributive reading of the adjective (I must thank an anonymous reviewer of my (2001b) paper for this suggestion).

- (21) a. Aquestes eugues es ferren fàcilment. (Catalan)
 these mares ES shoe easily
 b. Aquestes mandonguilles s'enfarinen fàcilment.
 these meatballs SE (in)flour easily
- (22) 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
- (23) a. *Aquestes eugues s'empenyen fàcilment.
 these mares SE push easily
 b. *Aquests pollastres es persegueixen fàcilment.
 these chickens ES chase easily
- (24) 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
- (25) 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
- (26) 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 an abstract terminal coincidence relation, which has been argued to be the source of their lexical telicity.

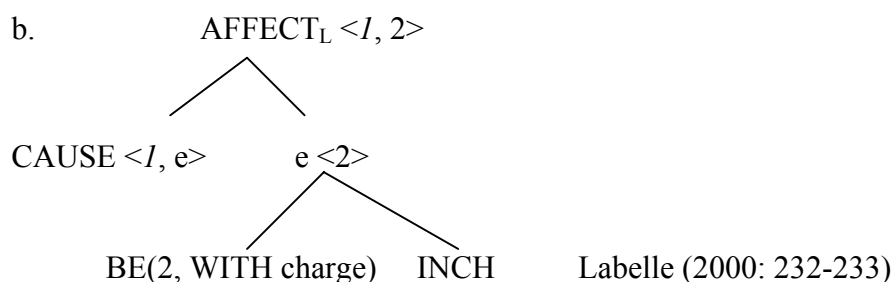
Unsurprisingly, the data in (27) concerning locative verbs like *encaixar* ('to (in)box') also conform with this generalization. It becomes then clear that Hale & Keyser's statement that locative verbs like *shelve* contain a terminal coincidence relation is not to be based on a pure intuition, but rather on linguistic facts like those in (27).

- (27) a. Aquests llibres grossos no s'encaixen fàcilment.
 these books big not SE (in)box easily
 b. En Joan encaixa [els llibres]_i [drets]_i
 Joan (in)boxed [the books]_i [straight]_i

Therefore, if my generalization concerning the correlations between semantic notions like terminal/central coincidence relations and aspectual notions like (lexical) telicity/atelicity is on the right track, it turns out that the evidence in (21) through (27) supports our hypothesis that a terminal coincidence relation is involved in the argument structure of locatum verbs (*contra* Labelle (2000); Hale & Keyser (1993, 1998)).

On the other hand, a central coincidence relation (*WITH*) has also been said to be involved in the change of state variant of locative alternation verbs. Let me now exemplify why such a proposal cannot be directly translated to Romance, as is done by Labelle (1992a: 305; 2000: 232-233) in her semantic analysis of (28a) in (28b), which corresponds to the conceptual structure of the change of state variant of the locative alternation verb *charger* ('to load').

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



Despite the intuitive plausibility of (28b), 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 (*with) bricks*. As I have argued elsewhere, it can be inferred from the Catalan data in (29) and (30) that the central coincidence preposition *amb* ('with') in locative alternation verbs like *carregar* 'load' 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. (29d)), nor in sentences coappearing with a true instrumental (cf. (30b)).¹⁹

- (29) 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
- (30) 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 cart with bricks with the crane

As a result, I claim that it is wrong to postulate that the inner relational head in the argument structure 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 occupied by the abstract terminal coincidence relation that can be associated to

¹⁹ See Pascual (1999, 2001) for a recent minimalist analysis of instrumental PPs.

any telic 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 (31):

- (31) 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 (31) captures Labelle's (1992a; 2000) 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 (32a). As pointed out by Labelle (1992a: 286), if Luc was already inside the cellar, Eva could imprison him simply by locking the door.

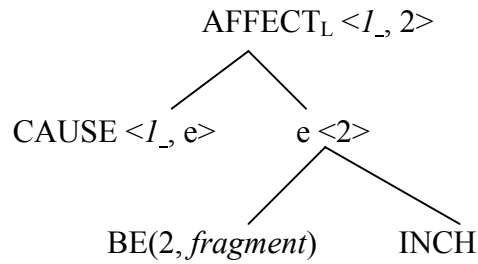
- (32) a. Eva emprisonne Luc dans la cave. (French)
b. Max abrite la voiture.

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.

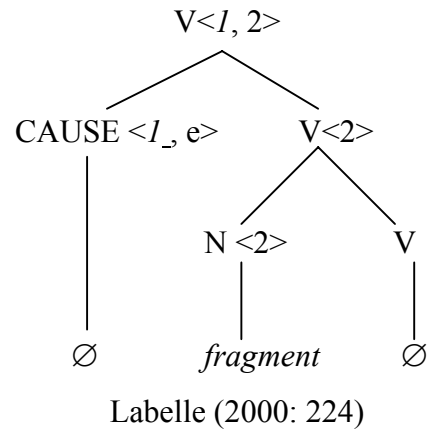
On the other hand, Labelle points out that there is a class of denominal verbs, which are not typically commented on when discussing locative and locatum verbs. Some of her relevant examples are those in (33). (34) represents the conceptual structure assigned by Labelle to the denominal verb *fragmenter* ('to fragment').

- (33) 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)

(34) Conceptual structure:



Morphological structure:



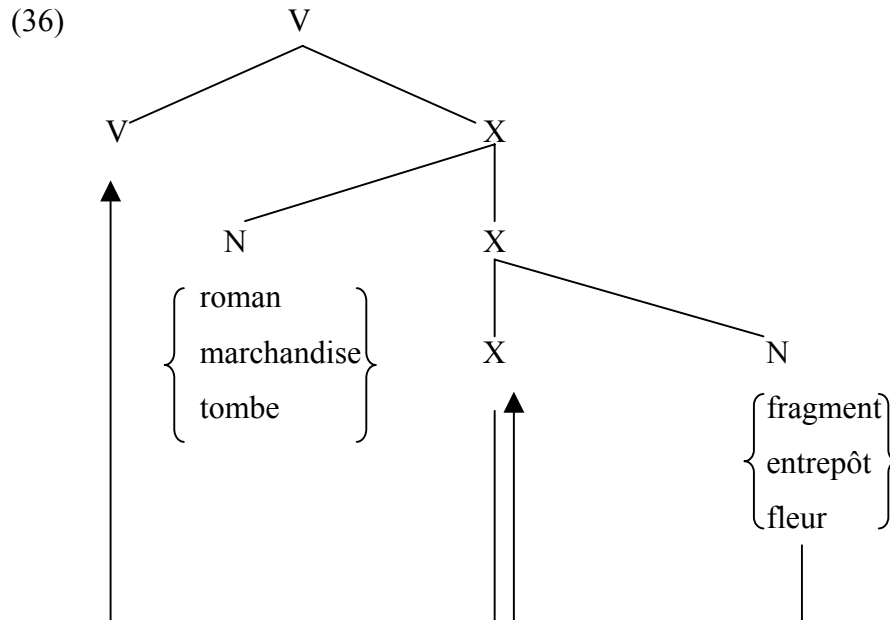
As can be seen in (35), notice that, according to Labelle, the only difference between denominal verbs like those in (33), and locative or locatum verbs is that the former lack the relational element which takes the incorporated noun as its argument. As noted above, one of our most important objections to Labelle's semantic analysis is that concerning the sublinking depicted in (35), which is simply stipulated.

- (35) a. BE(2, fragment) ----- N <2>
 b. BE (2, AT entrepot)----- N <2>
 c. BE (2, WITH fleur) ----- N <2>

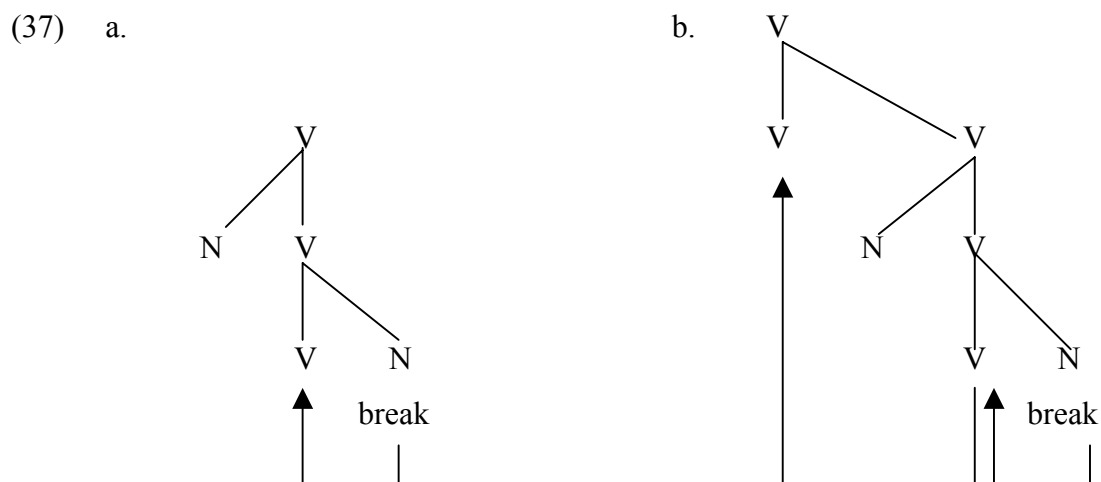
In contrast to Labelle's triple classification, one reductionist proposal within Hale & Keyser's framework would be to postulate that the three classes of verbs we are analyzing be assigned a common argument structure, the one in (36), which is formed by merging (2b) into (2a): in (36), a verb subcategorizes for a categorially unspecified X , which corresponds to the birelational element associated to an abstract terminal coincidence relation, this being the determinant of its lexical telicity.²⁰

²⁰ Here I will not discuss 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 (36), or as part of the

Furthermore, the appearance of an external argument in the specifier position of the relevant functional category in sentential syntax could be said to be related to the causative interpretation of the verb in (36) (cf. section 1.4).



On the other hand, notice that the account of denominal verbs of change of state I am tentatively developing here within Hale & Keyser's framework could be said to part ways with their (1998: 90) analysis of verbs like *break*: according to them, these verbs are assigned the unaccusative structure in (2c) as the basic one (cf. (37a)), the transitive structure resulting from merging (2c) into (2a) (cf. (37b)).

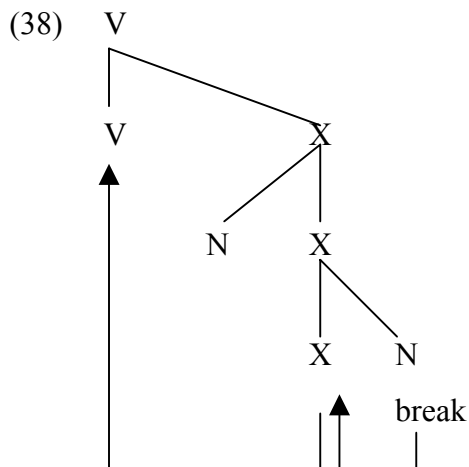


causative verb. The former option is coherent with Di Sciullo's (1997) or Gràcia's et al. (2000) morphological analyses, whereas the latter option is taken on by Labelle (1992a).

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 (2c)), 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 alternation.

However, as we will see below (section 1.3), the causative alternation cannot be taken as a relevant test when working out the relevant argument structures involved, because, unlike Hale and Keyser, I think that the existence of such an alternation does not depend on merely structural or morphosyntactic factors, but semantic/conceptual ones are also involved (see Levin and Rappaport Hovav (1995: chap. 3) or Kiparsky (1997), among others).

Once the causative alternation is eliminated as a structural criterion (see section 1.3 below), there would seem to be no obstacle to posit that the lexical syntactic structure of the verb *break* is the same one, the one in (38), where the categorially unspecified relational element X is to be associated to the abstract terminal coincidence relation.²¹

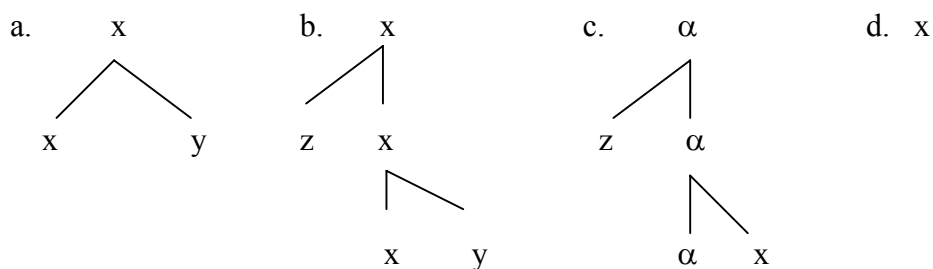


²¹ Following Levin & Rappaport Hovav (1995: chap. 3), I will assume that verbs like *break* or *clear* can be descriptively analyzed as 'externally caused verbs of change of state' in both the transitive and intransitive variants. Accordingly, the verbal head in (38) is always to be interpreted as causative. See section 1.4 below for a more detailed analysis (cf. (56d,l)). See also this section and the appendix of this chapter for my present proposal that these causative verbs are *not* to be decomposed as containing two event positions in the syntactic(ally transparent) argument structure representations (*contra* Mateu (1997, 1999)); cf. Harley (1995, 2002) for arguments against the *bieventive* (i.e., CAUSE-BECOME) analysis of lexical causatives). Harley convinced me of the problems inherent in my previous (otherwise standard) positing two event positions in lexical causatives. Indeed, such a move which will not be welcome by many semanticists, alas!

Assuming the consequences of such a move, I will argue that the BECOME event that is said to be involved in lexical causatives is not but the result of an *interpretive effect*, namely, that of joining the causative verb with the telic relational element X in (38).

So far my review of Hale & Keyser's (1998) analysis of transitive denominal verbs. My considering locative and locatum verbs as change of state verbs leads me to discuss the status of the semantic notion of 'state', which is assumed to be expressed by the lexical x in (2c), repeated below in (39c). The following section is devoted to showing the non-primitive status of the lexical head x in (39c). As a result, the argument structure combination in (39c) will be shown to be reduced to the one in (39b).

(39) Head (x); complement (y of x), predicate (x of z)



1.3. On the non-primitive status of argument structure properties of 'Adjectives'

In this section, I put forward the hypothesis that the lexical head x in (39c) is not to be seen as an atomic element, as in Hale & Keyser's approach, but as a composite unit: in particular, the lexical head x in (39c), whose unmarked morphosyntactic realization in English is the category Adjective (A), can be argued to be decomposed into two more primitive lexical syntactic elements.²² I claim that A involves the conflation of a non-relational element like that expressed by the lexical head y in (39b) into a relational element like that expressed by the lexical head x in (39b). That is to say, the structural combination in (39b) allows us to account for the argument structure properties of A s as well. Accordingly, the argument structure of the 'small clause'-like combination involved in two sentences like those in (40a-b) turns out to be the same, the one in (40c). Quite crucially, I claim that the conflation of y into x

²² At first glance, this hypothesis should not be surprising at all: the fact that some languages lack the A category is coherent with its secondary status.

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*.²³

- (40) 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 seems to be quite natural from a conceptual perspective as well. For example, from a Jackendovian perspective, the Conceptual Structure assigned to (41a) 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.²⁴

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

On the other hand, 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 (cf. chapter 3 below): e.g., not only do Romance languages lack adjectival resultative constructions like the one in (42a), but prepositional ones like the one in (42b) are lacking in these languages as well:²⁵

- (42) a. Joe kicked the door open.

²³ 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.

²⁴ See Jackendoff (1990: 250) for a localistic analysis of the LCS corresponding to the causative verb *open*.

²⁵ (42a’) and (42b’) are grammatical on the following irrelevant readings: (42a’) is grammatical if the Adj is interpreted not as resultative but as attributive: i.e., ‘the open door’; (42b’) is grammatical if the PP has a locative, non-directional reading: i.e., ‘the kicking took place inside the bathroom’.

- 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 dinsel bany.
 The Joe kick-past-3rd.sing the dog inside the bathroom

As shown in the second part of the present thesis, the “reduction” of the configuration in (39c) to the one in (39b) will be empirically motivated by my crosslinguistic analysis of resultatives: the syntactic element corresponding to the telic 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.²⁶ If we are willing to maintain that the relevant explanation accounting for the data in (42) 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 telic 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 l-syntactic elements seems to be justified.

At first sight, the present modification or reduction of Hale & Keyser’s (1998, 1999a) basic argument structure types could be said to be at odds with their approach, this being due to the fact that the causative alternation is presented by them as an important point that allows them to maintain the structural distinction between the denominal verbs that involve Merge of (39b) into (39a), and the deadjectival verbs that involve Merge of (39c) into (39a). According to them, such a structural distinction explains why the former are always transitive, whereas the latter can have an intransitive variant (the α verbal head in (39c) 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 alternation if they denote events that can proceed without an explicit animate agent. According to Kiparsky (1997: 497), “denominal verbs do participate in the causative

²⁶ See Goldberg (1995) for the insight that AP resultative constructions involve an abstract Path.

alternation if they denote events which can proceed on their own (*caramelize, shortcut, 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*)”.

Moreover, it is interesting to notice that in Catalan we find unaccusative denominal verbs like those in (43), which can be argued to be assigned the same I-syntactic structure as that corresponding to **The books shelved* (cf. [V V [P N [P P N]]]). Given this, it is not clear to me how the relevant contrast here could be explained by means of purely I-syntactic facts. Rather it is my claim that **The books shelved* is excluded by semantic facts: in this sentence *the books* cannot be said to be understood as self-propelled objects (cf. Kiparsky (1997)).

- (43) a. L’helicòpter aterrà tard. (Catalan)
 the helicopter (to)landed late
- b. L’hidroavió amarà tard.
 the hydroplane (to)sea-ed late

On the other hand, Kiparsky points out that there are deadjectival verbs that can *not* participate in the causative alternation: e.g., cf. *legalize, visualize, etc.*

Similarly, Levin and Rappaport Hovav’s (1995: 104-105) examples in (44-45) also show that the licensing of the verb in the causative alternation seems to be more dependent on semantic conditions rather than on morphosyntactic ones. According to Levin & Rappaport Hovav (1995: 105), “detransitivization is possible precisely where an externally caused eventuality can come about without the intervention of an agent.”

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

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

That is to say, the relevant conclusion for our present purposes seems to be the following one: the causative alternation cannot be taken as a valid structural criterion when working out the relevant argument structures. For example, the fact that denominal verbs like *shelve* or *saddle* do not enter into the causative alternation, whereas deadjectival verbs like *open* do, is not due to a purely structural source, as Hale & Keyser propose, but to the fact that only those two denominal verbs *necessarily* involve an agent. On the other hand, it is clear that the oddity of examples like those in (44b-45b), when compared to those in (44d-45d), should not be of concern to syntacticians either, since it is our encyclopedic knowledge what seems to be relevant when dealing with these contrasts. Notice moreover that similar considerations can also be argued to hold for Kiparsky's observations quoted above. Accordingly, the main objection that Hale & Keyser could entertain with respect to my eliminating the apparently basic combination of (39c) vanishes.

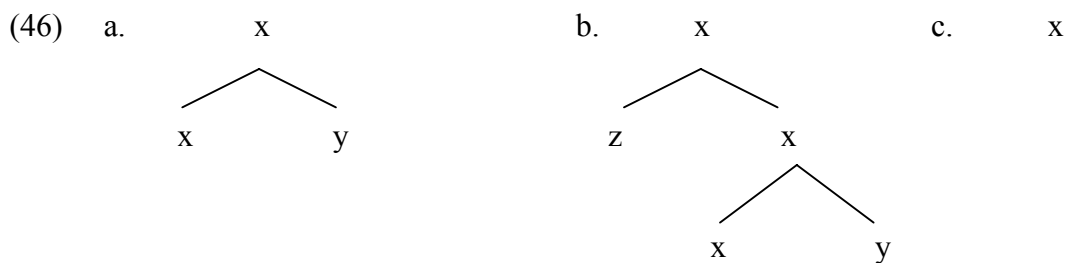
Before concluding this section, one important caveat is in order: my recognizing that the facts partly go with the semantics with respect to the causative alternation should not be seen as incompatible with my adopting a syntactically transparent approach to argument structure. Rather the relevant conclusion should be the following: those who are willing to adopt a pure syntactic approach to argument structure like Hale & Keyser's (1998, 1999a) should avoid elaborating on complex hypotheses to explain facts that fall out of their program.

1.4. Argument structure meets homomorphism

I want to argue that the reduction of (39c) to (39b) is not only empirically supported, as shown in the previous section, but is welcome from a theoretical perspective as well. The purpose of the present section 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.²⁷ Such a proposal can be said to depart from Hale & Keyser's (1999a: 465) claim (cf. "the fact that structures can carry meaning is orthogonal to our program"), but I will show that they are not correct when stating this claim as it stands.

My present proposal partakes in both Hale & Keyser's (1988) syntactic theory of the basic argument structure types and Mateu's (1999) semantic theory of argument structure, where certain meanings were associated with certain structures. Quite importantly, I want to argue that the reduction proposed above allows us to synthesize these two proposals in quite an elegant and simple way. Given this reduction, the basic, irreducible argument structure types turn out to be those in (46).



I want to argue that the reduction of (39) to (46) allows homomorphism to show up in the terms expressed in (47): given (47), the relational syntax of argument structure can be argued to be directly associated to its corresponding relational semantics in quite a uniform way:

- (47) a. The lexical head *x* in (46a) is to be associated to an *eventive relation*.
 b. The lexical head *x* in (46b) is to be associated to a *non-eventive relation*.
 c. The lexical head *x* in (46c) is to be associated to a *non-relational element*.

The eventive relation that is uniformly associated to the *x* in (46a) can be instantiated as two different semantic relations:²⁸ if there is a non-derived external

²⁷ See Bouchard (1995), Baker (1997), Mateu (1999), and Mateu & Amadas (2001) for relevant discussion on the homomorphic nature between syntactic and semantic structures.

²⁸ Following Hale & Keyser (1993f.), I do not analyze the head associated to the eventive relation as a functional one (*contra* Harley (1995)). This notwithstanding, the 'eventive' term will be

argument in the specifier position of the relevant *F*(unctional) projection,²⁹ the eventive relation will be instantiated as a *source relation*, the external argument being interpreted as ‘Originator’ (cf. van Voorst (1988), Borer (1994) and Mateu (1999), among others). If there is no external argument, the eventive relation will be instantiated as a *transitional relation* (cf. Mateu (1999)), which in turn always selects a non-eventive relation (cf. (46b)), whose specifier and complement are interpreted as ‘Figure’ and ‘Ground’, respectively (this terminology being adapted and borrowed from Talmy (1978, 1985)).

The source relation is involved in transitive structures (cf. x_I in (48)) and unergative structures (cf. x_I in (49)), while the transitional relation is that involved in unaccusative structures (cf. x_I in (50)). Notice that the only structural difference between transitive structures (cf. (48)) and unergative structures (cf. (49)) is based on the type of complement selected by the source relation: while a non-eventive relation is selected in (48) as complement, it is a non-relational element that is selected in

used in Harley's (1995) sense here: for example, according to her, both *BECOME* and *BE* can be considered as different instantiations of the very same head, i.e., the unaccusative *eventive* head.

Pending discovering a better term (e.g., situation head) to avoid terminological confusion with the current aspectual classification of predicates, which can often be argued to be irrelevant as far as the syntactic projection of arguments is concerned (cf. Baker (1997) and Mateu (1997) for some pertinent critical remarks: e.g., as argued by these authors, the "stativity" of verbs like *exist* and *fear* is of no relevance to the syntactic projection of their arguments), I will continue using Harley's term here. Accordingly, 'eventive' is not to be understood in the current aspectual sense but rather in the sense of (lexical) relational head associated to the (functional) Tense head. I am grateful to Violeta Demonte and M. Teresa Espinal for alerting me to the possible terminological confusion with the current aspectual classification of predicates.

Cf. also Langacker (1987a,b; 1999) for the view that verbs express temporal relations. Indeed, Langacker's claim that "every verb profiles a *process*" (p.10) should not be analyzed from the current aspectual equation 'processes' = 'activities': cf. his additional remark that "a process might also be called a *temporal relation* <his emphasis: JM>" (p. 10) (the quotes are taken from Langacker (1999)).

²⁹ See Marantz (1984), Hale & Keyser (1993), or Kratzer (1996), among others, for arguments for positing that the 'external argument' is truly external to the lexical VP-structure (*contra* Mateu (1997, 1999)). For reasons of space, I will not review the relevant arguments of the former here, assuming that they are correct. For expository reasons, I adopt the proposal that it is a *Functional* head (be it Chomsky's (1995) *v*, Kratzer's (1996) *Voice* or Bower's (1993, 2002) *Pr(edication)*) that introduces the external argument (caveat: I will not represent the ('weak' *sic*): cf. Chomsky (2001a)) *F* head in unaccusative structures. Functional categories will be usually omitted here since they are largely irrelevant to my present discussion on the relational syntax and semantics of lexical categories, i.e., those relevant to argument structure configurations).

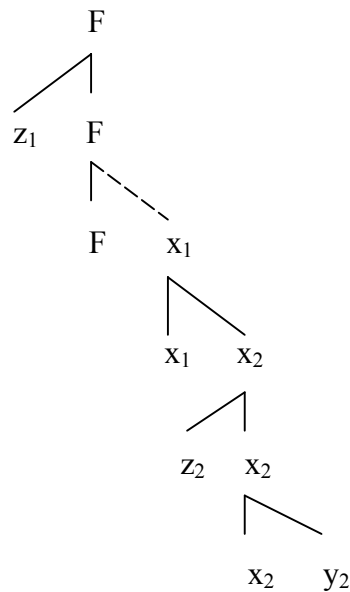
On the other hand, let me point out that I am very sympathetic to Hale & Keyser's (1998: 75; fn.3) proposal in (i) (*pace* Marantz (1984) and Kratzer (1996)). As far as I can see, the decision between the two competing proposals will also be largely irrelevant to my present purposes:

- (i) "Following Bittner (1994; and see also Hale & Bittner (1996)) we will assume that the subject (whether external or raised from an internal position) enters into a 'small clause' relation with the VP predicated of it (cf. Koopman and Sportiche (1991))-it is structurally an adjunct to the VP and, moreover, a 'distinguished adjunct' coindexed with the VP, a formal notation corresponding to predication (cf. Williams (1980))".

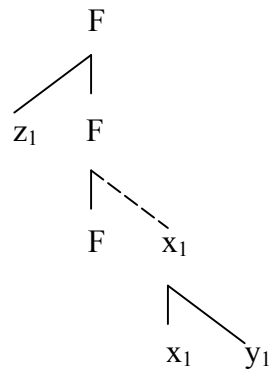
(49). I will assume Harley's (2001, 2002) proposal that this non-relational element is to be interpreted as an 'Incremental Theme'.

Quite interestingly, notice also that the transitive structure in (48) can be argued to partake in both an unergative structure (the eventive relation x_1 is interpreted as a source relation to be associated with an external argument z_1 via F) and an unaccusative structure ((48) includes a non-eventive relation x_2).³⁰

(48) *Transitive structure*

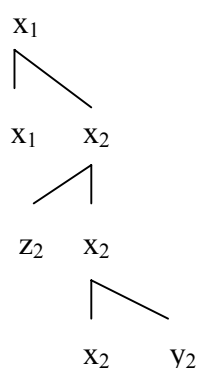


(49) *Unergative structure*



³⁰ It is important to point out that (48), (49) and (50) are each provided with only one event position. Although causative verbs like *melt* are often said to be semantically decomposed into two events (the causing event and the caused one), I argue, along with Harley (1995f.), that such a decomposition is not allowed in the syntax (*contra* Hale & Keyser (1993f) and Mateu (1999), among others). As a result, Fodor's (1970) arguments against lexical decomposition do not carry over to the proposal I am entertaining here: more on this issue in the appendix below. See also Harley (1995, 2002) for more arguments for such a move.

(50) *Unaccusative structure*



Quite importantly, it is necessary to draw a crucial distinction between those relational elements that can encode grammatically relevant aspects of *semantic construal* and those non-relational elements that mostly encode grammatically irrelevant aspects of pure *conceptual content* (cf. Mateu (1999) and Mateu & Amadas (2001)). In this section I will limit myself to providing a preliminary sketch of what that important theoretical distinction could mean in the present framework.³¹

First let us deal with the semantic construal of relational elements. Two different aspects of semantic construal must be distinguished: (i) the configurational semantics that can be read off the mere argument structures and (ii) the non-configurational semantics associated to the relational heads of these structures.

Concerning (i), it is my claim that structural semantic properties like eventive (*{source/transitional}*), non-eventive, and non-relational can be argued to be directly read off the mere argument structure configurations. For example, the x_1 relation is to be read as a source relation in (48) and (49), but as a transitional relation in (50). The x_2 relation is to be read as a non-eventive spatial relation in both (48) and (50).

Concerning (ii), my claim is that the non-configurational semantic properties associated to the relational heads are encoded as binary features in a way like that exemplified in (51):³²

³¹ Needless to say, a full exploration of the empirical consequences of adopting such an important distinction is beyond the scope of this work: see section 1.5 below for an analysis of some relevant particular cases.

³² See Mateu (1997, 1999) for the proposal that the $[+r]$ and $[-r]$ features are correlated to Hale & Keyser's (1993f.) 'terminal coincidence relation' and 'central coincidence relation', respectively. See Hale (1986) for relevant discussion on these grammatically relevant semantic relations (cf. the following footnote). One caveat is in order here: quite probably, more refinements will be necessary here. For example, I surmise that more complex hierarchies of spatial features will be necessary when trying to relate Hale & Keyser's notions of 'terminal/central' coincidence relations with Jackendoff's (1983, 1990) different types of 'paths' and 'places'. I leave this topic for future research. On the other

- (51) [+R]: positive semantic value associated to the source relation
 [-R]: negative semantic value associated to the source relation
 [+T]: positive semantic value associated to the transitional relation
 [-T]: negative semantic value associated to the transitional relation
 [+r]: positive semantic value associated to the non-eventive relation
 [-r]: negative semantic value associated to the non-eventive relation

As notions of semantic construal, the positive/negative (or alternatively, dynamic/static) semantic values associated to the lexical relational heads can be argued to be grammatically relevant.³³ This notwithstanding, notice that this non-configurational distinction is not relevant to the syntactic projection of arguments. Consider the minimal pairs (52a-b) and (52c-d), and their corresponding argument structures in (53).

- (52) a. John sent Peter to prison.
 b. John kept Peter in prison.
 c. Peter went to prison.
 d. Peter was in prison.

- (53) a. [_F John [_{X1} [+R] [_{X2} Peter [_{X2} [+r] prison]]]]
 b. [_F John [_{X1} [-R] [_{X2} Peter [_{X2} [-r] prison]]]]
 c. [_{X1} [+T] [_{X2} Peter [_{X2} [+r] prison]]]
 d. [_{X1} [-T] [_{X2} Peter [_{X2} [-r] prison]]]

hand, the [+R] feature subsumes both the CAUSE function and the agentive {ACT/DO} function, while the [-R] feature subsumes the HAVE function (cf. transitive stative verbs like *fear*) and whatever (standard?) function is assigned to non-agentive unergative verbs (e.g., verbs of smell emission). Cf. Baker (1997) and Mateu (1997, 1999) for theoretical arguments in favor of these reductions.

Finally, [+T] and [-T] subsume the {GO/BECOME/CHANGE} and {BE/STAY} functions, respectively.

³³ For example, see Tenny (1994: 190-192), where it is explicitly argued that the information associated to the CAUSE function (subsumed under [+R] here) or the GO function (subsumed under [+T] here) is essentially aspectual, ergo grammatically relevant. See also Mateu (2001b) for some grammatically relevant correlations that can be established between (lexical) telicity and 'terminal coincidence relation', and between (lexical) atelicity and 'central coincidence relation'. See also section 1.2 above.

Despite the different semantic values associated to the source relation (the dynamic one in (53a), and the static one in (53b)), and despite the different ones associated to the non-eventive/spatial relation (the dynamic one in (53a)), and the static one in (53b)), it is nevertheless clear that both (52a) and (52b) are indistinguishable as far as their syntactic projection of arguments is concerned. I want to argue that this is due to the fact that both (52a) and (52b) have the very same syntactically transparent argument structure, that in (48). Accordingly, in both (53a) and (53b), *John* is interpreted as ‘Originator’, *Peter* as ‘Figure’, and *prison* as ‘Ground’.

Similarly, the same reasoning should be valid with respect to the minimal pair in (52c)-(52d): Despite the different semantic values associated to the transitional relation (the positive one in (53c), and the negative one in (53d)), and despite the different ones associated to the non-eventive relation (the positive one in (53c), and the negative one in (53d)), it is nevertheless clear that both (52c) and (52d) are indistinguishable as far as their syntactic projection of arguments is concerned. I want to argue that this is due to the fact that both project the very same argument structure, the unaccusative one in (50): Accordingly, in both (53c) and (53d), *Peter* is interpreted as ‘Figure’, and *prison* as ‘Ground’.

As it stands, notice that my claim that the semantic values in (51) are not directly relevant to the syntactic projection of arguments should allow syntax to generate structures like that in (54b).

- (54) a. Peter stayed with him.
 b. *John stayed Peter with him.

Following Chomsky (2001b: 9),³⁴ I assume that theta-theoretic failures at the interface yield ‘deviant structures’. Given the present set of assumptions, (54b) is to be ruled out because of the incompatibility between an external argument, whose

³⁴ “Uncontroversially, theta-theoretic properties depend in part on configuration and the semantic properties SEM(H) of the head (label). In the best case, they depend on nothing else (the Hale-Keyser version of theta theory). Assuming so, there are no s-selectional features or theta-grids distinct from SEM (H), which is typically a rich and complex structure, and theta-theoretic failures at the interface do not cause the derivation to crash; such structures yield ‘deviant’ interpretations of a great many kinds.” Chomsky (2001b: 9)

presence is inherently associated to that of a source relation $[(\pm)R]$, and the semantic value lexically associated to the eventive head of *stay* (i.e., $[-T]$). That is to say, the failure in (54b) is not due to the configurational semantics because nothing prevents (54b) from being attributed the configurational interpretation corresponding to the transitive structure in (48): that is, in (54b) *John* would in principle be allowed to be *structurally* interpreted as Originator. However, it is a fact of the English lexicon that ‘verbs of existence/appearance’ do not select an external causer (i.e., in our present terms, the SEM (H) of the lexical item *stay* is associated to the $[-T]$ feature),³⁵ hence (54b) is ill-formed.

On the other hand, I would like to emphasize that one important tenet of the present theory is that there is no configurationally based lexical decomposition beyond those argument structure configurations in (48-50).³⁶ Accordingly, I want to argue that the lexical decomposition of verbs like those in (55) stops at the coarse-grained level of these syntactically transparent argument structure configurations, the root depicted in italics being always associated to a non-relational element encoding pure conceptual content (cf. (56)).^{37,38}

³⁵ But see Davis & Demirdache (2000:127-128), who point out that in Salish verbs of existence and appearance select an external causer. This notwithstanding, the fact that this class of verbs is consistently associated with an unaccusative syntax in English (see Levin & Rappaport Hovav (1995)) can be argued to be related to the claim that these verbs are lexically associated to the $[\pm T]$ feature. Accordingly, the English lexical item *stay* is prevented from entering into a transitive argument structure of the following type: $[_F z_1 [_{X1} [(\pm)R] [_{X2} z_2 [_{X2} x_2 y_2]]]]$.

³⁶ No favorable claim is then made here concerning the lexical decomposition approach that rejects the homomorphic relation between the syntax and semantics of argument structure (cf. Jackendoff (1990) or Pustejovsky (1995), *inter alia*). See section 1.5 below for a critical review of Jackendoff’s conceptual approach to lexical decomposition; cf. Fodor (1998: chap. 3) for a severe criticism of Jackendoff’s approach; cf. also Fodor & Lepore (1998) and Uriagereka (1998b) for two critical reviews of Pustejovsky’s (1995) account of lexical generativity.

On the other hand, see section 1.5 below for a positive review of Baker’s (1997) homomorphic conception of the syntactic and semantic structures. It is a pleasure for me to acknowledge his influence on my work here.

In the present section I will also show why Fodor’s negative view of lexical decomposition does not provide any interesting answer to those non-trivial questions arising from those works that postulate an homomorphism between the syntax and semantics of argument structure configurations.

³⁷ See Hale & Keyser (1999b) for the lexical syntactic analysis of transitive activity verbs like *to push* and transitive stative verbs like *to love*: According to them, the ‘impact noun’ *push* and the ‘psych nominal’ *love* must be linked to their source, the external argument, i.e., the s(entential)-syntactic subject. These nominal roots are supplied with a bracketed subscript representing a variable which must be bound *obviatively*. See Hale & Keyser (1999b) for more details.

³⁸ Following Levin & Rappaport Hovav (1995), I assume that verbs such as those in (55d,e) *and* (55l,m) can be descriptively characterized as ‘externally caused verbs of change of state’: see Chierchia (1989) and Levin & Rappaport Hovav (1995) for arguments in favor of positing a causer in (55l,m). In particular, I apply Mendikoetxea’s (2000) analysis to verbs like those in (55l,m): a PRO element is argued to occupy the position associated to the Originator, which is in turn controlled by

- (55) a. John corraled the horse.
 b. John saddled the horse.
 c. John killed the horse.
 d. John broke the glass.
 e. John cleared the screen.
 f. John pushed the horse.
 g. John kissed the horse.
 h. John loved the horse.
 i. John feared the horse.
 j. John rolled (deliberately).
 k. John stank.
 l. The glass broke.
 m. The screen cleared.
 n. The ball rolled.
 o. John died.
 p. John came.
 q. John lived.

- (56) a. [F John [X1 [+R] [X2 horse [X2 [+r] CORRAL]]]]
 b. [F John [X1 [+R] [X2 horse [X2 [+r] SADDLE]]]]
 c. [F John [X1 [+R] [X2 horse [X2 [+r] KILL]]]]
 d. [F John [X1 [+R] [X2 glass [X2 [+r] BREAK]]]]
 e. [F John [X1 [+R] [X2 screen [X2 [+r] CLEAR]]]]
 f. [F John_i [X1 [+R] [X2 horse [X2 [-r] PUSH_i]]]]
 g. [F John_i [X1 [+R] [X2 horse [X2 [-r] KISS_i]]]]
 h. [F John_i [X1 [-R] [X2 horse [X2 [-r] LOVE_i]]]]
 i. [F John_i [X1 [-R] [X2 horse [X2 [-r] FEAR_i]]]]
 j. [F John [X1 [+R] ROLL]]
 k. [F John [X1 [-R] STINK]]
 l. [F PRO_i [X1 [+R] [X2 glass_i [X2 [+r] BREAK]]]]

the Figure argument, which has moved to spec of Tense (cf. (56l,m)).

Moreover, I assume Levin & Rappaport Hovav's (1995) proposal that *roll*-verbs are unergative in their agentive sense, and unaccusative otherwise. Here I also assume their more controversial claim that verbs of existence like *live* are unaccusative. For reasons of space, I will not review their arguments for these classifications, assuming that they are correct.

m.	[_F PRO _i	[_{X1} [+R]	[_{X2} screen _i	[_{X2} [+r] <i>CLEAR</i>]]]]
n.		[_{X1} [+T]	[_{X2} ball	[_{X2} [-r] <i>ROLL</i>]]]]
o.		[_{X1} [+T]	[_{X2} John	[_{X2} [+r] <i>DIE</i>]]]]
p.		[_{X1} [+T]	[_{X2} John	[_{X2} [+r] <i>deictic Gr.</i>]]]]
q.		[_{X1} [-T]	[_{X2} John	[_{X2} [-r] <i>LIVE</i>]]]]

Quite importantly, I want to embrace the non-trivial radical hypothesis that the only open-ended class of roots is that corresponding to those non-relational elements occupying the specifier and complement positions in (56) (those encoding grammatically irrelevant conceptual content).³⁹ Accordingly, as far as the syntactically transparent lexical decomposition is concerned, I claim that the non-relational element corresponding to the root in italics is a Fodorian atom.⁴⁰

Finally, the argument structures in (56) can be argued to be sanctioned in virtue of the *lexical licensing* that is informally sketched out in (57).^{41,42}

³⁹ One important caveat is in order here: The conceptual stuff depicted by caps must not be interpreted “as it stands”. For example, I do *not* actually claim that the non-relational element *CORRAL* in (56a) is to be interpreted as the noun *corral*. Rather what is required is that *CORRAL* be interpreted as the non-relational element (i.e., the abstract Ground) included in the caused change of state verb *to corral* (cf. Mateu (2001b)). The same holds for morphologically less transparent cases (e.g., cf. (56c,o,p): what is meant by *KILL*, *DIE* (not *death!*) or *LIVE* (not *life!*) is the non-relational element (i.e., the abstract Ground) included in the verbs *to kill*, *to die* and *to live*, respectively. It should then be clear that, unlike what is said by Fodor & Lepore (1999), those adopting Hale & Keyser’s (1993) framework do *not* actually claim what generative semanticists did claim *illo tempore*: i.e., that the verb *to kill* means to *cause to die* (or alternatively CAUSE (X) to {GO TO DEATH/BECOME NON ALIVE}). More on this below (cf. the appendix). See also Hale & Keyser (1999) and Harley (2002) for some relevant remarks.

⁴⁰ To a certain extent the present approach to lexical decomposition is in tune with Khalaily's (1997) insightful claim that *all* lexical verbs can be shown to include a Sibawayhian nominal-like atom (cf. Sibawayhi (1970/8th C.)). However, I disagree with his radical proposal that the verb lacks primitive status in syntactic theory. For reasons of space, I will not review his theoretically and empirically sound work here.

Indeed, what follows should not be taken as a mere rash philosophical speculation. Quite the opposite: After trying to properly understand what I informally call “the basics” (cf. Mateu (1999) and Mateu & Amadas (2001) for some preliminary results of theoretical investigation on lexical decomposition issues), I have arrived at the conclusion that a very plausible way for human beings to learn novel complex lexical concepts like (non-light) verbs and adjectives is (i) *learning* a potentially infinite number of *non-relational* elements and (ii) combining them via the very limited/reduced number of *innate relational* elements to produce a potentially infinite number of complex lexical items (i.e., verbs and adjectives). In short, (non-light) verbs and adjectives *appear* to form an open class *since* they contain Sibawayhian nominal-like atoms, the latter forming the true/primitive open class. Cf. *infra* for more discussion on Fodor's criticism of lexical decomposition.

⁴¹ See Harley & Noyer (2000) for an interesting D<istributive>M<orphology>-based approach. For reasons of space, I will not review their work here.

⁴² My theory of licensing is similar in spirit to Erteschik-Shir & Rapoport's (1997) one in (i), whose framework is based on Hale & Keyser's (1993) configurational theory of argument structure.

(57) <i>Descriptive label</i>	<i>Unmarked RelSem features</i>	<i>Example</i>
telic causative verbs	[[+R] [+r]]	<i>CLEAR</i>
atelic agentive transitive verbs	[[+R] [-r]]	<i>PUSH</i>
atelic stative transitive verbs	[-R] [-r]]	<i>LOVE</i>
agentive unergative verbs	[+R]	<i>ROLL</i>
non-agentive unergative verbs	[-R]	<i>STINK</i>
telic unaccusative verbs	[[+T] [+r]]	<i>DIE</i>
atelic non-stative unaccusative verbs	[[+T] [-r]]	<i>ROLL</i>
atelic stative unaccusative verbs	[-T] [-r]]	<i>LIVE</i>

They point out that "a *partial* <my emphasis: JM> classification of verbal nucleus types is in <(i): JM>" (p. 133).

(i)	<i>Relation denoted</i>	<i>Unmarked insertion</i>	<i>Unmarked interpretation</i>	<i>Examples</i>
	dynamic-state	V-AP	inchoative/achievement	melt, break, cut, carve
	dynamic-instance	V-NP	activity	hammer, read, laugh, run

Erteschik-Shir & Rapoport (1997: 134: ex. (7))

As emphasized by these authors, in *free insertion* theories "the unmarked association is not the only possibility. Marked associations with other structures are always possible, constrained only by the possibility of an interpretation for them" (p. 134).

I am very sympathetic to the their free insertion theory: e.g., within my framework, 'unergativized' agentive verbs (e.g., *Don't push!*) or unergative uses of stative transitive verbs (e.g., cf. Lat. *Odi et amo* lit. 'Hate-I and love-I' Catullus (I BC)), would be explained as involving free insertion of their corresponding roots into the complement position of the [+R] and [-R] unergative heads, respectively.

On the other hand, another partial theory of lexical licensing is that put forward by Rappaport Hovav & Levin (1998). Concerning their theory of licensing of *constants* (e.g., 'manner', 'instrument', etc.), they point out that "(...) the fundamental canonical realization rules *include* <my emphasis: JM> those given below":

- (ii) a. manner → [x ACT <MANNER>]
(e.g., *jog, run, creak, whistle,...*)
- b. instrument → [x ACT <INSTRUMENT>]
(e.g., *brush, hammer, saw, shovel,...*)
- c. placeable object → [x CAUSE [BECOME [y WITH <THING>]]]
(e.g., *butter, oil, paper, tile, wax,...*)
- d. place → [x CAUSE [BECOME [y <PLACE>]]]
(e.g., *bag, box, cage, crate, garage, pocket,...*)
- e. internally caused state → [x <STATE>]
(e.g., *bloom, blossom, decay, flower, rot, rust, sprout,...*)
- f. externally caused state → [x CAUSE [BECOME [y <STATE>]]]
(e.g., *break, drey, harden, melt, open, ...*)

Rappaport Hovav & Levin (1998: 109: exs. (17)-(22))

Unsurprisingly, theories of licensing are typically partial (cf. the emphasized expressions above: "a *partial* classification" / the rules *include*..."): indeed, we are dealing with a very slippery domain here. However, notice that Erteschik-Shir & Rapoport's theory in (i) and the one assumed here (cf. (57)) are much more restrictive than Rappaport Hovav & Levin's one in (ii): while an arguably limited number of aspectual types could be said to provide the explanatory constraints of the models in (i) and (57), it is not clear to me which explanatory constraints limit the number of the *descriptive* rules in (ii) (perhaps their excellent intuition or common sense as lexical semanticists?).

His rebus cognitis, notice that we have arrived at a very simple theory of what a possible primitive element could be. There are two kinds of elements in our theory of argument structure: relational elements (cf. (47a-b) and the following discussion) and non-relational elements (cf. (47c)). While the number of the former can be argued to be finite (in fact, very limited), the number of the latter can be argued to be infinite.

On the other hand, I strongly disagree with Fodor's well-known claim that *all* lexical concepts are primitive elements. Given this claim, Fodor is then obliged to embrace the following non-trivial consequence pointed out by Jackendoff:

(58) "An especially unpleasant consequence of Fodor's position is that, given the finiteness of the brain, there can be only a finite number of possible lexical concepts. This seems highly implausible, since one can coin new names for arbitrary new types of objects and actions ('This is a glarf; now watch me snarf it'), and we have no sense that we will someday run out of names for things (...) It is hard to believe that nature has equipped us with an ability to recognize individual things in the world that is limited to a finite number".

Jackendoff (1990: 40-41)

Indeed, the present theory allows us to maintain the basic intuition involved in the creativity of concept formation that is alluded to by Jackendoff in (58). For example, we should not be surprised if there appears to be a non-trivial learning process involved in the concept formation from potentially infinite non-relational elements with very specific meanings like those of $\{glarf/SNARF\}$ ⁴³, which by no means could be assigned the status of innate monades.

Given the present discussion, this is also the appropriate place to partake in the theoretically interesting debate between Fodor & Lepore (1999) and Hale & Keyser (1999a). In order to provide some relevant background, let us consider Hale & Keyser's (1993: 60) explanation of the ungrammaticality of a sentence like the

⁴³ *glarf* = non-relational element associated to the invented noun *glarf*; *SNARF* = non-relational element included in the invented transitive verb *to snarf*.

one in (59), which is argued to have the same argument structure as that of (60). Hale & Keyser's relevant explanation is quoted in (61):

(59) * It cowed a calf.

(60) A cow had a calf.

(61) “It is well known that a subject (i.e., a subject that originates as an external argument) cannot incorporate into the verb that heads its predicate (...) Presumably, incorporation from the subject position, external to VP, would violate the ECP (...). We will argue later that the subject of verbs of the type represented in (11) (<i.e., (59)-(60)>: JM) is external in the sense that it is not present at all in Lexical Relational Structure. Lexical incorporation would therefore be impossible.”
Hale & Keyser (1993: 60)

However, Fodor and Lepore are not convinced by the explanation in (61) and their corresponding reply is as follows:⁴⁴

(62) “There must be something wrong with HK's account of cases like (59) since, even if it did explain why there couldn't be a *derived* verb *to cow* with the paraphrase in (60), **it does not explain why there couldn't be a *primitive, underived* verb *to cow* with the paraphrase (60)** (<emphasis added: JM>). As far as we can tell, this sort of point applies to any attempt to explain why a word is impossible by reference to the impossibility of a certain transformation (...) We assume, along with HK, that the intuition about (59) is that it is *impossible* –and not just that *if* it is possible, then it is underived. (We do not suppose that anyone, except perhaps linguists, has intuitions of the latter kind.) So we claim that HK have not explained the intuition that *to cow* is impossible”.
Fodor & Lepore (1999: 449)

Unfortunately, notice that Hale & Keyser's (1999a: 463) rejoinder quoted in (63) does not address Fodor & Lepore's main objection, that emphasized in (62)

⁴⁴ For expository reasons I have changed Fodor & Lepore's (1999) numeration of the examples.

above. In fact, the former limit themselves to pointing out the following explanation that the latter do not actually want to call in question.⁴⁵

- (63) “Fodor & Lepore object that we do not “explain why there couldn’t be a *primitive*, underived verb *to cow* with the paraphrase ‘A cow had a calf’”. We guess that such a verb could *only* come about through illicit conflation, in which case the conflation account is more successful than we have hoped to show”.

Hale & Keyser (1999a: 463; fn. 8)

The present story is nicely summarized by Uriagereka (1998b: 3-4):

- (64) “Suppose you tell Fodor & Lepore that the word *pfzrrt* does not exist because it is really derived from *CAUSE x to do something*, or any such variant, which violates principle P. Say they accept your argument;⁴⁶ here is what they will ask you: ‘Why couldn’t *pfzrrt* mean whatever it means as a primitive, just as *CAUSE* or whatever-have-you is a primitive?’. You complain: ‘But *pfzrrt* cannot be a primitive!’ Their next line: ‘Why, do you have intuitions about primitives!’? So either you have a great theory of those primitives, or else you loose, and you do simply because you do not want what you see to be what you get (...). In sum, you know you need a limited set of primitives. Fodor & Lepore invite us to think of the lexicon as such as, more or less, that very set of primitives; that might be large, but nobody said the primitives have to be few, so long as they are finite. A serious, sophisticated theory of a (small?) number of primitives will arguably fare better, but you have to produce that theory; Fodor & Lepore do not have to produce the lexicon, because it’s there”.

Uriagereka (1998b: 3-4)

Rebus sic stantibus, we owe Fodor & Lepore an explanation concerning their objection emphasized in (62) above. To be sure, I agree with them that nobody

⁴⁵ Consider Fodor & Lepore’s *concessive* clause in (62): “(...) even if it did explain why there couldn’t be a *derived* verb *to cow* with the paraphrase in (60)...”.

⁴⁶ For example, take the ECP as the “principle P” (cf. (61) above). As noted in the previous footnote, Fodor & Lepore could actually accept the “technical” argument (cf. the concessive clause in (62)). That is, the “real” problem is another one.

(linguists included!) has intuitions about primitives. So nothing is gained by pointing out that *to cow* (with the paraphrase in (60)) cannot be a primitive. It is then clear that it is not our intuitions that should tell us what is a primitive and what is not. Indeed, I think that the success of such a task will depend on having an adequate theory. And here is my theory: as emphasized above, the only open-ended class of roots can be argued to correspond to those non-relational elements occupying the specifier and complement positions in (48-49-50) (e.g., cf. (56)). By contrast, it is quite plausible to argue that the relational elements (the eventive relations and the non-eventive/spatial relations) do form a closed class of roots. As noted above, there is a very important difference between relational elements and non-relational elements: the former are associated with (grammatically relevant) semantic notions concerning what we call ‘semantic construal’, while the latter are associated with notions encoding pure ‘conceptual content’, which are mostly opaque to grammar (Mateu & Amadas (2001)).

Notice then that the theoretically sound distinction between relational vs. non-relational elements becomes crucial in my reply to Fodor & Lepore’s objection in (62): the mere relational nature of the invented verb *to cow* should prevent us from taking this lexical item as a primitive, since in the present theory only non-relational elements can be argued to encode ‘conceptual content’ monades (cf. *supra*). Moreover, the kind of background knowledge to be encoded into the allegedly primitive verb *to cow* cannot be placed on a par with the non-encyclopedic-like meanings that are typical of the very limited set of relational elements encoding ‘semantic construal’.

This said, it is worth pointing out that my reply to Fodor & Lepore’s objection is to be seen as compatible not only with Hale & Keyser’s claims quoted in (61) and (63) above, but also with their claim quoted in (65) below. Here I have limited myself to showing that Fodor & Lepore’s main objection in (62) can be more properly addressed from the semantic face of argument structure, rather than from the syntactic one. Quite importantly, I would like to emphasize that the compatibility of Hale & Keyser’s claims with mine can be argued to show up as a result of the homomorphism between those two faces.

(65) “In reality, all verbs are to some extent phrasal idioms, that is, syntactic structures that must be learned as the conventional ‘names’ for various dynamic events (...) To be sure, many languages boast a large inventory of simple monomorphemic verbs. But our guess is that most, probably all, superficially monomorphemic verbs are lexically phrasal, possessing a structure that is syntactic, satisfying the requirements of Unambiguous Projection and Full Interpretation”.
Hale & Keyser (1993: 96)

It should then be clear that it is our present theory (not our intuitions!) that prevent us from taking lexical items as *to corral*, *to saddle*, *to kill*, *to love*, etc. as primitives, i.e., as innate lexical concepts à la Fodor. To be sure, we cannot take what we see to be what we get. Why? Basically, we cannot do so because we have shown that a minimal syntactically transparent lexical decomposition is necessary in order to provide an appropriate answer to questions like the following ones: (i) Why are there so few theta-roles?, (ii) Why is there no verbal predicate having more than three arguments? Without such a minimal syntactically transparent lexical decomposition, it is not clear to me which theoretically interesting answer could be provided to those non-trivial questions. To the best of my knowledge, no principled account has been given by Fodor concerning those two questions pointed out by Hale & Keyser (1993), and addressed by Baker (1997), Mateu (1997, 1999), or Mateu & Amadas (2001). No doubt: I am fully convinced that the appropriate answers to those two important questions will finally shed light on what a(n argument structure) primitive is.

To conclude, I have shown that the task of working out what a semantic primitive is should be mainly grounded on the basis of the important distinction between those relational elements encoding aspects of semantic construal and those non-relational elements encoding aspects of conceptual content. The number of the former can be argued to be very limited, while the number of the latter can be taken as potentially infinite. Given such a crucial distinction, notice that the potentially infinite lexical creativity of human beings alluded to by Jackendoff in (58) should not be a problem for me as it is for Fodor.

In the following section, I will review some fundamental aspects of Jackendoff’s (1990, 1997a) conceptual approach to semantic composition. In doing

so, I will also show that the present approach to argument structure provides a more explanatory account of the syntax-semantics interface.

1.5. Towards a syntactically transparent semantic composition: The basics revisited

In this section, I will take pains to show some of the theoretical and empirical benefits from drawing the following important distinction put forward by Mateu & Amadas (2001):⁴⁷

(66) Meaning is a function of both (non-syntactically transparent) *conceptual content* and (syntactically transparent) *semantic construal*.

As noted in section 1.4, it is precisely this distinction that allows us to speak of a syntactically transparent semantic composition, i.e., that based on argument structure notions involving semantic construal. Mateu & Amadas (2001) show that assuming the distinction in (66) forces one to reconsider “the basics”.

Here I will concentrate on comparing two basic arguments for a complex syntax-semantics interface (e.g., cf. Jackendoff (1990, 1997a)), with my present arguments for a uniform/simple syntax-semantics interface.⁴⁸

Let us then deal with the following basic argument against a simple/uniform syntax-semantics interface, that expressed in (67):

(67) “It is widely accepted that syntactic categories do not correspond one to one with conceptual categories. All physical object concepts are expressed by nouns, but not all nouns express physical object concepts (consider *earthquake*, *concert*, *place*, *redness*, *laughter*, *justice*). All verbs express event or state concepts, but not all event or state concepts are expressed by verbs (*earthquake* and *concert*

⁴⁷ With those parentheses in (66) eliminated, such a distinction is to be originally found in Langacker’s (1987a, 1991, 1999) theory of Cognitive Grammar. Because of Langacker’s very different assumptions concerning what grammar is, I will not try to compare his cognitive approach with mine. Such an enterprise would take me too far afield. Rather here I will limit myself to reviewing some of Mateu’s (1999) arguments for (66) from a new perspective. In my 1999 paper I tried to incorporate some crucial insights of Langacker into the generative paradigm.

⁴⁸ For reasons of space, some intricate arguments like those presented in Jackendoff (1997b: chap. 3) will not be reviewed here. I hope to do so in another work. For the present purposes, here I will limit myself to dealing with “the basics”.

again). Prepositional can express places (*in the cup*), times (*in an hour*), or properties (*in the pink*). Adverbs can express manners (*quickly*), attitudes (*fortunately*), or modalities (*probably*). Thus the mapping from conceptual category to syntactic category is many-to-many, though with interesting skewings that probably enhance learnability”

Jackendoff (1997a: 33-34)

To be sure, Jackendoff is right: lexical categories cannot be defined in terms of pure conceptual content. However, as argued by Mateu (1999), his main error in presenting such an argument is his reducing semantics to notions of conceptual content. Unfortunately, Jackendoff neglects the Langackerian distinction in (66), and, as a result, he does not consider the option that lexical categories can be argued to be directly associated to more abstract *semantic* notions in quite a uniform way, as shown in (68):⁴⁹

(68) Ns correspond to non-relational elements (i.e., z_s and y_s in (69)).⁵⁰ Vs correspond to eventive relations (i.e., x_1 in (69)), Ps correspond to non-eventive relations (i.e., x_2 in (69)), and both Adjs and Advs correspond to the x_2 - y_2 complex (y_2 being conflated into x_2). In non-predicative contexts, Adjs typically

⁴⁹ The following quote from Langacker (1993: 472) appears to be relevant here: “From my perspective, it is utterly implausible to suppose that something as fundamental and universal as the noun and verb classes would not reflect a rudimentary conceptual distinction. *The usual mistake is to assume that such a distinction would have to reside in specific conceptual content, in which case viable definitions are indeed unavailable* (<emphasis added: JM>)(...). Meaning is a function of both content and *construal*. It is in the realm of construal and basic cognitive abilities that we must seek the schematic characterization of lexical classes”. Cf. also Langacker (1987b, 1999). Unfortunately, some bad criticisms of Langacker’s notional definitions of nouns and verbs (e.g., cf. Newmeyer (1998)) do not take his important distinction into consideration.

⁵⁰ After the oral presentation of Mateu (1999), Jane Grimshaw pointed out to me the well-known (but I would add “misunderstood”) fact that Ns like *destruction* are ‘relational’ nouns. My reply was/is that they are ‘non-relational’ elements *in the sense that* they occupy those slots corresponding to non-relational elements in (69). The usual classification of nominalizations as ‘relational’ (e.g., cf. Grimshaw (1990), among many others) derives, I argue, from a confusion of those two dimensions of meaning in (66): although nominalizations like *destruction* can be considered to be ‘relational’ regarding their conceptual content, they have been semantically construed as non-relational elements. Quite interestingly, arguments in favor of this hypothesis can be found in two works of very different theoretical orientation: (i) cf. Law (1997), where it is shown that the N heading a nominalization like *destruction* does not take complements/arguments; (ii) cf. Langacker (1999), where it is argued that in a verb like *to destroy* a process relation is ‘profiled’ (*sic*), while in a nominalization like *destruction* “the event or process as a whole is construed as an abstract thing and is profiled by the nominal expression” (p. 86). Once again I must acknowledge that I am in debt to Langacker’s work for making me realize how wrong I was when taking some “usual” (unfortunately, quite widespread) assumptions on lexical categories for granted.

modify non-relational elements, while Adv_s typically modify relational elements.⁵¹

- (69) a. transitive structure: $[_F Z_1 [_F F [_{x_1} X_1 [_{x_2} Z_2 [_{x_2} X_2 Y_2]]]]]]]$
 b. unergative structure: $[_F Z_1 [_F F [_{x_1} X_1 Y_1]]]$
 c. unaccusative structure: $[_{x_1} X_1 [_{x_2} Z_2 [_{x_2} X_2 Y_2]]]$

With Hale & Keyser (1993), I strongly believe that the explanation accounting for the very limited number of lexical categories is related to the explanation accounting for the very limited number of ‘theta-roles’. Accordingly, here I assume the strong hypothesis: i.e., it is precisely the very same explanation that seems to be involved in accounting for these two apparently unrelated facts. Quite importantly, Mateu & Amadas (2001) argued that one theoretically interesting insight to be found in Hale & Keyser (1993) (to our view, one that strongly militates against a complex syntax-semantics interface like that envisioned by Jackendoff (1990, 1997a)) is their realizing that the following questions are intrinsically related: ‘*Why are there so few lexical categories?*’ / ‘*Why are there so few thematic roles?*’. Notice that for Jackendoff it does not make sense to inquire into the relation of both questions. We considered that important insight pointed out by Hale & Keyser (1993) as providing us with a very strong theoretical argument in favor of the ‘perfectly’ designed syntax-semantics interface envisioned by Chomsky (1995).

Next let us deal with another basic argument against a uniform syntax-semantics interface: i.e., Jackendoff’s (1990: 155-156; 1997a: 33-36) recurrent attacks against Baker’s (1988) Uniformity of Theta Assignment Hypothesis.⁵²

- (70) “For instance, the syntactic position of direct object can express the thematic roles Theme, Goal, Source, Beneficiary, or Experiencer, *depending on the verb* <(emphasis added: JM)> (...) To claim dogmatically that these surface

⁵¹ Notice that in small clause-like contexts (e.g., *John is happy*; *John is here*), the differences between Adj_s and Adv_s are neutralized with respect to their argument structure properties.

⁵² Baker’s (1988: 46) UTAH is a well-known attempt of “minimizing” the syntax-semantics interface:
 “Identical thematic relationships between items are represented by identical structural relationships between those items at the level of D-Structure.”

direct objects must all have different underlying syntactic relations to the verb, as required by UTAH, necessarily results in increasing unnaturalness of underlying structures and derivations.”

Jackendoff (1997a: 34-35)

My reply runs as follows: the syntactically relevant ‘thematic roles’ do not depend on the *conceptual content* contributed by the verb, but are rather to be drawn from those argument structures in (69) encoding *semantic construal*. Quite importantly, the uniformity hypothesis requires then that the ‘thematic roles’ relevant to UTAH not be drawn from intuition-based {theta-grids/LCSs}. Rather my claim is that they are drawn from syntactically transparent argument structures like those in (69).

It should be clear that my conviction that the present approach to thematic structure is more explanatory than Jackendoff’s (1990) conceptual approach is not merely based on a pure matter of choice. Before dealing with Jackendoff’s argument in (70) (i.e., the direct object can be said to be associated to multiple thematic roles), let me first exemplify what I want to argue for with some easy cases, which will be (hopefully!) sufficient for me to show my main claim.

Consider the examples in (71). Quite importantly, I want to emphasize that it is our assumptions on argument structure (not our intuitions on semantic representation!) that should lead us to analyze the data in (71) as follows: roughly, the transitive structure in (71a) is assigned the argument structure in (72a),⁵³ the unergative structure in (71b) is assigned that in (72b), and the unaccusative structure in (71c) is assigned that in (72c).

- (71) a. The chimney gave smoke off.
 b. The chimney smoked.
 c. The smoke went out of the chimney.

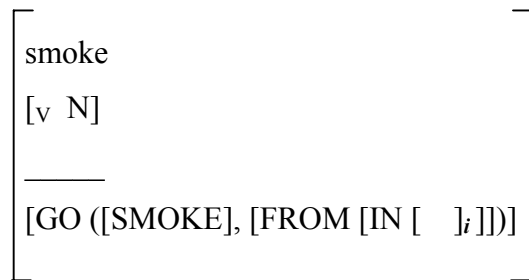
- (72) a. [_F The chimney [_{X1} gave [_{X2} smoke [_{X2} off]]]]
 b. [_F The chimney [_{X1} [+R] SMOKE]]]

⁵³ Following Svenonius (1996) and Hale & Keyser (2000b), I assume that bare particles like *off* in (72a) can be analyzed as prepositions incorporating a complement (i.e., the ‘Ground’). Accordingly, the birelational nature of prepositional heads is maintained.

c. [X₁ went [X₂ the smoke [X₂ out of the chimney]]]

As pointed out above, Jackendoff does not draw the distinction between (non-syntactically transparent) conceptual content and (syntactically transparent) semantic construal. As a result, it is not surprising that the unergative construction in (71b) is assigned the Lexical Conceptual Structure in (73). To be sure, both (71b) and (71c) could be argued to refer to the same conceptual event, but what is syntactically relevant is that their semantic construal is different. Crucially, notice that the only way to determine this is by consulting their syntax, not our intuitions on semantic representation.⁵⁴

(73) The chimney smoked.



Jackendoff (1990: ex. (29), p. 168)

As emphasized by Mateu (1997, 1999), current theories of thematic structure typically fail to make the following distinction: namely, the distinction between ‘non-relational roles’, which are extracted from structures encoding semantic construal, and ‘situational roles’, which are usually defined, and sometimes formalized (cf. Jackendoff (1990)), on the traditional basis of Fillmorian or Gruberian intuitive terms.

Generally speaking, I think that Bouchard’s (1995) critical remarks in (74) hold for Jackendoff’s (1990) theory of the syntax-semantics interface.⁵⁵

⁵⁴ Unfortunately, this is by no means an isolated case. For example, according to Jackendoff (1985; 1990: 76), the unergative structure *Joe climbed*, the transitive one *Joe climbed the mountain* and the unaccusativized unergative structure *Joe climbed to the top of the mountain* (cf. Hoekstra (1984)) *all* are assigned the conceptual structure corresponding to motion events, i.e., [GO ([Thing] [Path])]. By contrast, in a syntactically-based lexical decomposition system the latter semantic structure *only* holds for unaccusative structures (cf. chapter 5 below).

⁵⁵ See Bouchard (1995) and Mateu (1997, 1999) for some relevant criticisms of Jackendoff’s approach.

- (74) “The assumption that information from background knowledge is involved in the mapping from semantic structures to syntactic structures has led researchers to postulate semantic representations which are very different from the syntactic representations they assume (..) If inadequate semantic representations are adopted, then the correspondence between semantics and syntax is impossible to state because one of the elements in the relation does not have the appropriate properties”. Bouchard (1995:3/8)

For example, consider again Jackendoff’s analysis of the LCS in (73). Indeed, (73) can be said to encode (part of) the background knowledge associated to (71b). However, I concur with Bouchard when claiming that (syntactically transparent) semantic structures should be purged of that background knowledge that has to do with pure (i.e., grammatically irrelevant) conceptual content.

His rebus cognitis, let us deal with Jackendoff’s criticism in (70). He criticizes Baker’s UTAH by pointing out that the syntactic position of direct object can express a variety of thematic roles. However, recall the following important remark: Baker’s (1988, 1997) UTAH should not be intended to hold for contentful elements like ‘theta roles’ as they are conceived of by Gruber (1965, 1997, 2000), or by Jackendoff (1983, 1990). Rather it is my claim that such a hypothesis should be restricted to those non-relational elements to be drawn from argument structures like those in (69), whose relational elements have been argued to encode semantic construal notions (cf. section 1.4).

In order to show the differences between Jackendoff’s (1990) approach and mine concerning how thematic structures are worked out, it can be useful to compare some of his thematic structures analyzed in his (1990) book with those I would argue for given the present assumptions. Consider for instance the verbs in the examples in (75) and their corresponding thematic structures included in the lexical entries in (76).

- (75) a. Peter bottled *the wine*. (“Theme object”)
b. Peter buttered *the bread*. (“Goal object”)
c. Peter emptied *the sink*. (“Source object”)

(76) a.
$$\left[\begin{array}{l} \text{bottle} \\ [\text{v N}] \\ \text{--- NP}_j \\ [\text{CAUSE} ([]_i, [\text{GO} ([]_j, [\text{TO} ([\text{IN} ([\text{BOTTLE}<\text{S}>)]))])])])]) \end{array} \right]$$

Jackendoff (1990: ex. (35a); 170)

b.
$$\left[\begin{array}{l} \text{butter} \\ [\text{v N}] \\ \text{--- NP}_j \\ [\text{CAUSE} ([]_i, [\text{INCH} [\text{BE} ([\text{BUTTER}], [\text{ON}_d ([]_j)])])])]) \end{array} \right]$$

Jackendoff (1990: ex. (14); 164)

c.
$$\left[\begin{array}{l} \text{empty} \\ \text{V} \\ \text{--- NP}_j \\ [\text{CAUSE} ([]_i, [\text{INCH} [\text{NOT BE} ([], [\text{IN}_d ([]_j)])])])]) \end{array} \right]$$

Jackendoff (1990: ex. (30); 168)

Indeed, the examples in (76) are not intended to exhaust the options concerning the conceptual kind of thematic role that a direct object can express. For example, according to Jackendoff (1997a: 35), the direct object can also be said to be associated to ‘Beneficiary’ in (77a), ‘Experiencer’ in (77b), and who knows what in (77c).

- (77) a. George helped *the boys* (“Beneficiary object”)
 b. The story annoyed *Harry* (“Experiencer object”)
 c. The audience applauded *the clown* (“??”)

Jackendoff (1997a: 35).

It seems to me that Jackendoff often uses his intuition when trying to work out the relevant localistically based thematic structures. Two simple observations will be sufficient to warrant the latter statement: e.g., (i) The first one concerns some inconsistencies found in Jackendoff's work. For example, the direct object in (75c) is said to be associated to a "Source" role in Jackendoff (1997a: 34). However, notice that in (76c) the alleged Source is not represented as the argument of the Path-function FROM,⁵⁶ but as the argument of the Place-function IN;⁵⁷ (ii) The second observation has to do with the following non-trivial question: How can one work out the relevant thematic structures when 'localistic ideas' do not carry over to them in a(n intuitively) direct way? (e.g., cf. (77c)).

By contrast, I claim that argument structures are not to be drawn from intuition-based conceptual structures.⁵⁸ Rather the argument structures in (78) and (79) are to be worked out on the basis of the assumptions put forward in section 1.4. Let me emphasize three crucial assumptions made in the previous section: (i) no verbal predicate has more than 3 arguments;⁵⁹ (ii) non-relational elements are argued to encode pure (i.e., grammatically irrelevant) 'conceptual content', the relational ones being able to encode a very limited set of notions involving 'semantic construal'; (iii) the choice of [$\pm r$] is argued to be correlated with lexical {telicity/atelicity}. Moreover, it would be fair for me to recognize that two descriptive principles are constantly guiding me when working out the relevant

⁵⁶ According to Jackendoff (1990: 46), "Source –the object from which motion proceeds– appears structurally as the argument of the Path-function FROM".

⁵⁷ Moreover, it is not clear to me why the causative change of state verb *empty* is to be analyzed differently from the causative change of state verb *open*. According to Jackendoff (1990: 250), the latter is assigned the following thematic structure: [CAUSE ([Thing], [GO ([Thing], [TO [OPEN]]))]]. What should prevent one from analyzing *empty* as follows? [CAUSE ([Thing], [GO ([Thing], [TO [EMPTY]]))]]. Cf. (76c).

⁵⁸ Jackendoff (p.c.) reacted against such a claim made also in Mateu (2000a) as follows: "(...) my analyses have been motivated with the highest standards of parsimony, rigor, and in particular attention to the larger scientific context in which the problem of linguistic behavior is set. I also object to your citing with approval work by Hale & Keyser, without answering the strong empirical objections I posed in *Architecture*, pp. 231-232".

Here I will not enter into discussing "the highest standards of parsimony, rigor, etc." of Jackendoff's work (cf. Bouchard (1995) and Mateu (1997, 1999) for some relevant critical remarks, and Fodor (1998) for some severe criticisms), but will limit myself to reviewing his "strong empirical objections" against Hale & Keyser's work (cf. the appendix).

⁵⁹ Cf. the following informal notes by Harley: "In such theories <Jackendoff's, Pustejovsky's, and Levin's: JM> *there is no principled reason why a verb is allowed only 3 arguments*" (ex. from *The Oracle of Hale & Keyser*. Lecture 4, Course 522, Feb 9, 1999, University of Arizona). Cf. <http://w3.arizona.edu/~ling/hh/522/>

argument structures: namely, Baker's (1988; 1997) UTAH and Chomsky's (1981) Theta-Criterion. The remainder of this section is devoted to showing the descriptive validity of these principles (despite Jackendoff's (1990, 1997a) claims to the contrary).

- (78) a. [F Peter [X1 [+R] [X2 the wine [X2 [+r] BOTTLE]]]]
 b. [F Peter [X1 [+R] [X2 the bread [X2 [+r] BUTTER]]]]
 c. [F Peter [X1 [+R] [X2 the sink [X2 [+r] EMPTY]]]]
- (79) a. [F George_i [X1 [+R] [X2 the boys [X2 [-r] HELP_i]]]]
 b. [F The story [X1 [+R] [X2 Harry [X2 [+r] ANNOY]]]]
 c. [F The audience_i [X1 [+R] [X2 the clown [X2 [-r] APPLAUD_i]]]]

I think that Jackendoff missed the point in his criticism of Baker's UTAH: The "ideal situation" alluded to in (80) can be argued to be maintained *iff* it is those relations concerning 'semantic construal' (not those based on 'conceptual content') that are reflected directly and uniformly in (underlying) syntactic relations.⁶⁰

- (80) "In terms of the simplification of lexical entries, an *ideal situation* <(emphasis added: JM)> would be one in which conceptual relations were reflected directly and uniformly in syntactic relations. (...) This idealization finds expression in Case Grammar (Fillmore 1968), in GB Theory as the Uniformity of Theta Assignment Hypothesis (Baker 1988), and in Relational Grammar as the Universal Alignment Hypothesis (Rosen 1984; Perlmutter and Postal 1984). Unfortunately, the true story is not so simple. There are many apparent mismatches between conceptual arguments -even *expressed* conceptual arguments- and syntactic positions".

Jackendoff (1990: 155-156)

⁶⁰ It should also be noted here that the hypothesis of a simple/uniform syntax-semantics interface has also been independently pursued by those who claim that it is aspectual and/or event-structure based notions that turn out to be relevant to the syntax-semantics interface (e.g., cf. Tenny (1987, 1992, 1994), Borer (1994), van Hout (1996), Arad (1998), or Rosen (1996), among others).

In particular, Baker (1987) argued for a strong version of the UTAH from the following principles in (81).⁶¹

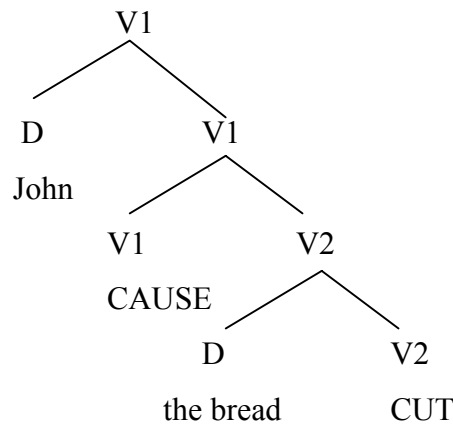
- (81) (a) An agent is the specifier of the higher VP of a Larsonian Structure.
 (b) A theme is the specifier of the lower VP.
 (c) A goal, path or location is the complement of the lower VP.

Baker (1997: 120-121)

According to Baker (1997: 124), “the three-way contrast between transitives, unergatives, and unaccusatives is therefore represented as in (<(82): JM>):”

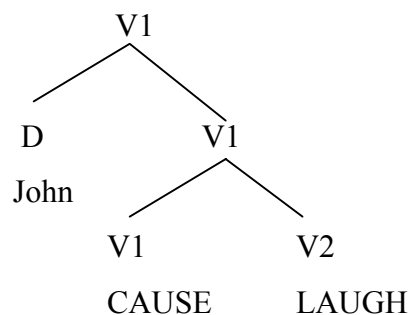
- (82) a. Transitive

John cut the bread: [x cause [y be linearly-separated]]

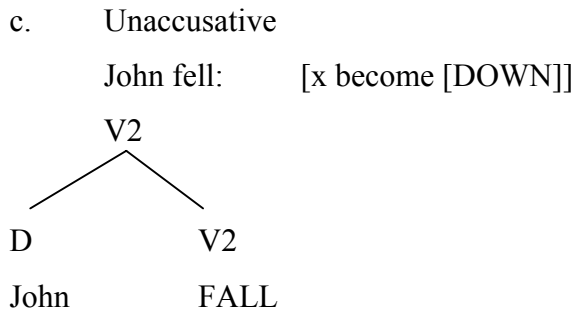


- b. Unergative

John laughed: [x cause [LAUGH]]



⁶¹ According to Baker (1997: 120), “UTAH is sensitive to a medium-coarse grained version of Theta theory, one that distinguishes three primary (proto-) roles: agent/causer, theme/patient, and goal/path/location. The conditions that it puts on the structural realization of these roles seem to be absolute, rather than relative, and they map the theme to a higher position than the goal”. Baker explicitly recognizes the influence of Dowty (1991) in his approach to (proto-)roles; cf. section 2.2.1 below for a critical review of Dowty’s (1991) theory of proto-roles and argument selection.



Let us then compare Baker's syntactic argument structures given in (82) with those I have argued for in (48-50), repeated in (69). Basically, I disagree with Baker concerning the degree of structural complexity inherent to argument structures. For example, consider Baker's analysis of unaccusative verbs. The argument structure depicted in (82c) is not a possible one in Hale & Keyser's (1993f) framework: according to Hale & Keyser, it is the case that *all* verbs are complex in that all subcategorize for a complement position (cf. (65) above). In fact, Baker does not explain how the projection of the lexical structure [*x become DOWN*] to the syntactic argument structure in (82c) is to be carried out. Indeed, there seems to be a non-trivial conflation process involved, which is omitted by Baker.

Moreover, elsewhere I have argued that unaccusative verbs are not to be regarded as monadic predicates (cf. Mateu (1997f)). My claim is that unaccusative structures always reflect a Figure-Ground configuration. As can be seen in (50), *two* non-relational elements are assumed to be syntactically projected: they are related via a non-eventive (i.e., spatial: cf. Mateu (1997f)) relation, which is to be regarded as a *birelational* element. Unaccusatives are often regarded as monadic predicates because they often project only one surface argument, i.e., the Figure. When dealing with the latter case, I claim that the non-relational element expressing the Ground can be argued to be conflated into the verb. Furthermore, notice that there is a non-trivial problem involved in (82c): namely, how can one know that *John* is actually occupying a specifier position? In contrast, positing a birelational element for unaccusatives solves this problem. Within Chomsky's (1994) bare phrase structure, 'Figure' can then be configurationally defined as the second non-relational element that is combined with that birelational element, this having been previously merged

with its complement, i.e., the non-relational element corresponding to the ‘Ground’.⁶²

On the other hand, as noted by Baker (1997: 124), his analysis of the argument structure corresponding to unergative verbs (cf. (82b)) parts ways with Hale & Keyser’s (1993, 1998) claim that unergative verbs are denominal (cf. (4a)). In particular, the latter posit that English unergative verbs can be properly regarded as the ‘synthetic’ (i.e., conflated) counterpart of their corresponding ‘analytic’ (i.e., more transparent) version in Basque. As exemplified in (83), unergative structures in Basque often correspond to the *N + egin* (‘do/make’) construction.⁶³

- | | | | | |
|------|----|---------------|-------------------------------------|--------|
| (83) | a. | barre egin | (‘laugh do/make’, i.e., ‘to laugh’) | Basque |
| | b. | lo egin | (‘sleep do/make’, i.e., ‘to sleep’) | |
| | c. | zurrunga egin | (‘snore do/make’, i.e., ‘to snore’) | |
| | d. | hitz egin | (‘word do/make’, i.e., ‘to speak’) | |

With Hale & Keyser, I take (83) as evidence that the non-relational element contained in the unergative argument structure is prototypically realized as a noun.⁶⁴ Notice that pursuing such a hypothesis allows me to maintain Hale & Keyser’s (1993f) insight that verbs (i.e., eventive relations) always subcategorize for a complement. Moreover, I assume, along with Harley (2001, 2002), that the argument contained in the unergative argument structure is to be interpreted as an ‘Incremental Theme’ (cf. also Tenny (1994) for a different use of this notion).

Finally, let us deal with Baker’s analysis of transitive argument structures. Notice that I share his implicit proposal that they can be argued to partake of both an unergative structure and an unaccusative one (cf. (82a)). However, Baker does not

⁶² I will leave my preliminary considerations on unaccusative verbs here. These will be taken up in chapter 2, where I provide a more extensive account of the syntax and semantics of the unaccusative construction.

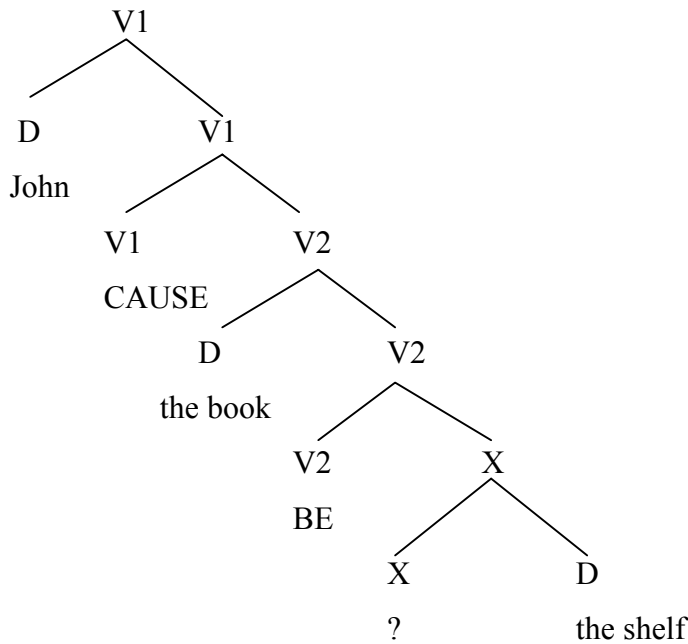
⁶³ See Hale & Keyser (1991), Laka (1993), and Rodríguez & García Murga (2001).

⁶⁴ It should be clear that I am not actually positing that unergative verbs are *always* denominal. For example, in Catalan unergative verbs like *dormir* (‘to sleep’) or *nedar* (‘to swim’) are not denominal. However, this mere surface fact should not prevent us from assuming that these verbs involve conflation of a non-relational element, which is to be seen as a morphosyntactically unspecified root: [_V V [_Y *dorm-/ned-*]].

I will provide a more comprehensive analysis of unergative verbs in chapter 2.

provide a uniform analysis of transitive structures as I do. For example, a causative change of state verb like *cut* (cf. *John cut the bread*) is assigned the syntactic argument structure in (82a), while a causative change of location verb like *put* (cf. *John put the book on the shelf*) is assigned the one depicted in (84).⁶⁵

(84) John put the book on the shelf

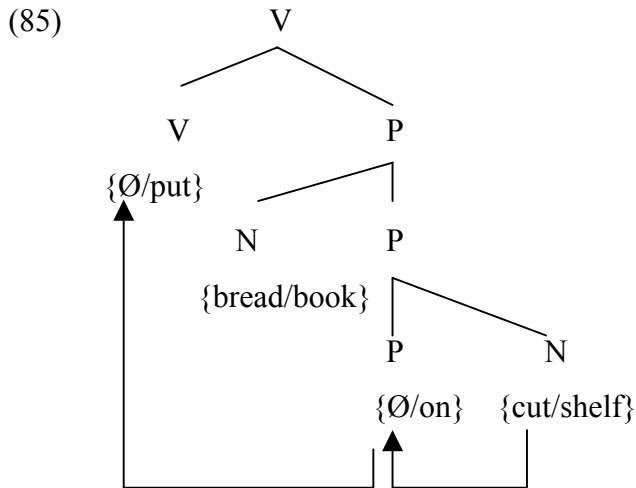


Baker (1997: 125)

Quite interestingly, the argument structure in (84) is very similar to the one posited by Hale & Keyser (1993). However, according to Hale & Keyser (1998f), *John cut the bread* and *John put the book on the shelf* would now be assigned the very same l-syntactic structure, that in (4b), repeated below in (85),⁶⁶ which coincides with the argument structure I have been arguing for (cf. (48)), the external argument (*John*) being external to this l-syntactic structure.

⁶⁵ Baker (1997: 125) points out that “I leave open the exact nature of the element X (...); the easiest way would be that X is simply the preposition *on*, but one may want to leave room for other kinds of cases”. In particular, in his footnote 46 Baker (1997: 132) notes that “the category adjective can be characterized crosslinguistically as an element that fills the X position in a representation like (79) <my (84): JM>”.

⁶⁶ Recall that for Hale & Keyser (1998) the possibility for a verb to enter into the causative alternation is given a crucial role when assigning argument structures (see section 1.3. for my qualms on this “strategy”; cf. also Kiparsky (1997)). Given the impossibility of **The bread cut*, one can suppose that *John cut the bread* would be assigned the same argument structure as that corresponding to “*John provided the bread with a cut*”. However, I think that this is not the correct semantic analysis (cf. section 1.2 above).



Concerning the formation of the verb *cut*, there are two conflation processes involved. The full phonological matrix corresponding to the non-relational element [_N *cut*] is first copied into the empty one corresponding to the P which expresses an abstract spatial relation; since the phonological matrix corresponding to the eventive relation (i.e., V) is also empty, the conflation applies again from the saturated phonological matrix of P to the unsaturated matrix of V.

This said, notice that, in spite of my disagreement with Baker in the details, there is full agreement concerning the truly important issues related to the UTAH, i.e., those concerning the *uniform/simple* conception of the syntax-semantics interface. To be sure, one important advantage of adopting a configurational approach to argument structure like that pursued by Hale & Keyser or Baker is that we do not need to resort to descriptive artifacts like ‘the thematic hierarchy’.⁶⁷

Generally speaking, it should then be clear that I share with Baker a general agreement concerning Hale & Keyser’s syntactic approach to lexical decomposition. As a result, I agree with Baker when saying:

(86) “(...) if this kind of lexical decomposition approach begun by Hale & Keyser and brought into the syntax by Chomsky <(1995): JM> and others is correct, then the UTAH essentially disappears as a separate condition of grammar”. “(...) If syntactic structure is built from the lexical decomposition of a verb (...), *the UTAH becomes trivial*. All that remains is a simple convention that

⁶⁷ Cf. Jackendoff (1972, 1990) or Grimshaw (1990), among others.

an argument must be in a local configuration with its argument-taker; the rest follows from compositional semantics. *We have then reduced the UTAH to a matter of ‘virtual conceptual necessity’*” (emphasis added: JM).

Baker (1997: 125-126)

On the other hand, some critics of Hale & Keyser’s (1993) theory of l-syntax (cf. Pullum (1996) or Jackendoff (1997a)) have argued that adopting a syntactically-based approach to lexical decomposition clearly returns us to the world of Generative Semantics (e.g., cf. McCawley (1968); Lakoff (1970)). In the following section I will review some of their criticisms of Hale & Keyser’s theory (see also Hale & Keyser (1999a)).⁶⁸ Here I will limit myself to pointing out an important distinction which is (implicitly or explicitly) drawn by some syntacticians who are sympathetic to Hale & Keyser’s approach (e.g., cf. Harley (1995), Mateu (2000a) or Travis (2000)): it is important to realize that we do not pretend to syntacticize *all* aspects of meaning! For example, as stressed by Mateu (2000a) and Mateu & Amadas (2001), we are only interested in those syntactically transparent aspects of meaning, which are minimal when compared to the remaining (i.e., non-syntactically transparent) aspects of meaning. To put it in Travis’s words:

(87) “We might return to a version of Generative Semantics that allows syntax to encode *bits* of meaning without running into the problem of trying to encode *all* of meaning in syntax” <(emphasis added: JM)>.

Travis (2000: 148)

This notwithstanding, Baker’s (1997: 126) following words seem to point to another direction:

(88) “(...) throughout this paper I have assumed that linguistic representations and conceptual representations are two different things, following a broadly Jackendovian line (...). However (...) if the relationship between L<ogical> F<orm> and Conceptual Structure becomes *too* natural, approaching the status of an isomorphism, it becomes appropriate to question whether there

⁶⁸ In the appendix (cf. *infra*) I will also show that Fodor’s (1970) arguments against lexical decomposition do not apply to the present theory.

are two representations at all; instead, there could be only one representation that is seen from two different perspectives. Thus, a more radical interpretation of the UTAH could be that it shows that there is no difference between the linguistic level of LF and ‘Conceptual Structure’”.

Baker (1997: 126)

Mutatis mutandis, notice that Baker appears to argue for a very similar (if not identical) ‘reduction/equation’ to the one generative semanticists argued for *illo tempore*.⁶⁹

However, it should be clear that I disagree with both Jackendoff’s tenet (i.e., there is no syntactically-based semantic composition) and the contrary one, that adopted by generative semanticists (i.e., all semantic composition is syntactically-based). I would then like to urge Baker to return to similar positions such as the one expressed by Travis (2000) in (87).

Finally, to conclude this section, let us deal with another theoretical artifact that has been argued to favor a uniform syntax-semantics interface: i.e., the Theta-Criterion, which is now put on a par with Baker’s UTAH concerning its non-primitive status in grammatical theory.⁷⁰

As is well-known, Jackendoff argues that the Theta-Criterion is not a valid hypothesis, because there appear to be many cases where a syntactic argument can be associated to more than one theta-role. For example, according to Jackendoff (1990: 60), a verb with multiple theta-roles on each NP is the verb *to chase*. He points out that for an action to count as chasing, at least three conditions must be satisfied, those one depicted in (89). Its corresponding semantic representation is found in Pinker (1989: 203): see (90).⁷¹

⁶⁹ In fact, Baker (1997: 127) points out that Chomsky himself seems to vacillate between the two following positions: “In Chomsky (1994: 4), C<onceptual>-I<ntentional System> is clearly presented as a performance *system*, distinct from the language faculty, that interprets LFs; on the other hand, Chomsky (1993: 2-3) uses C-I as a synonym for LF, referring to a *representation* built by the language faculty”.

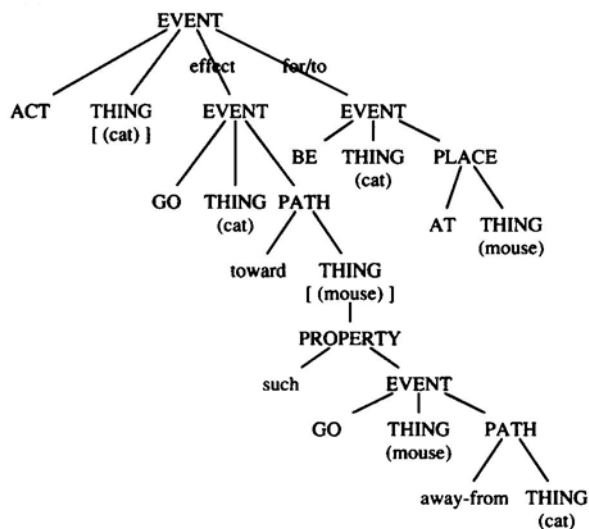
⁷⁰ See Hale & Keyser (1993) and Chomsky (1995) for different reasons preventing the Theta-criterion from being provided with primitive status in linguistic theory.

⁷¹ According to Pinker (1989: 203), (90) “can be glossed as ‘the cat acts and goes towards the mouse (which is going away from it) in order to be at the mouse’”.

- (89) X chase Y
- a. Y in motion
 - b. X moves toward (or along path of) Y
 - c. X intends to go to (or catch) Y

Jackendoff (1990: ex. (3); p. 60)

- (90) The cat chased the mouse.



Pinker (1989: 203)

Once again my reply to Jackendoff's arguments against the Theta-Criterion is to be based on the hypothesis that the syntactically relevant theta-roles (i.e., those relevant to the Theta-Criterion) are not those multiple roles that are drawn from the *conceptual content* expressed by the verbal predicate. Rather my claim is that the syntactically relevant theta-roles are those ones to be drawn from those argument structures encoding *semantic construal*. In the present case, I would argue that the argument structure corresponding to the transitive verb *chase* is the one depicted in (91):

- (91) [F The cat [X₁ [+R] [X₂ the mouse [X₂ [-r] CHASE]]]]

Jackendoff points out that there is no apparent reason to call one of those theta-roles drawn from (89) *the* theta-role of X or Y.⁷² To the extent that he is considering the conceptual content, he may be right. However, the conclusion to be drawn from my present proposal is that the Theta-Criterion has to do with the dimension of semantic construal, not with that of conceptual content. Once again it seems that we are talking at cross-purposes.

It is then important to notice that I fully reject Jackendoff's proposal in (92). As far as the syntactically transparent semantic construal is concerned, there is no real motivation for admitting an unconstrained richness of thematic roles. In short, I think that Jackendoff arrived at the conclusion in (92) because of his neglecting the crucial distinction in (66): he concluded (92) because of his neglecting the distinction between (syntactically transparent) semantic construal and (non-syntactically transparent) conceptual content.

(92) "The correspondence between syntax and theta-roles must be stated in somewhat less rigid terms, in particular admitting the real richness of thematic roles". Jackendoff (1990: 60)

1.6. Concluding remarks

Working out the relevant argument structures when doing lexical decomposition is not to be regarded as an enterprise guided by our intuitions on semantic representation. We should take the syntactically transparent aspects of meaning into consideration in our work on lexical decomposition.

On the other hand, our emphasizing the relevance of morphosyntactic factors when doing lexical decomposition should not prevent us from taking into account conceptual knowledge in our description of lexical semantics (for example, we have seen that the causative 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

⁷² See Jackendoff (1990: 60): "If Y is standing still, X isn't chasing Y (though (3a) <my (89a): JM> is conceivably a preference rule rather than a necessary condition for *chase*. Similarly, if X isn't moving toward Y, X isn't chasing Y, whatever Y's motions and X's intentions; and if X doesn't intend to go to (or catch) Y, X is at best *following* Y, not chasing Y. Thus X has two essential roles and Y three. Is there any reason to call one of these *the* 1-role of X or Y? Perhaps, but it requires some motivation".

semanticocentric approach like Jackendoff's could be reduced a great deal by recognizing the proper interaction between both components in lexical decomposition. It is my claim that to a certain extent this can be made possible *iff* the main thesis presented in this chapter is taken into account (cf. (66)): namely, "meaning is a function of both (non syntactically transparent) conceptual content and (syntactically transparent) semantic construal". Such a distinction has been argued to involve a non-trivial homomorphism between the syntax and semantics of argument structure representations.

Appendix: Refuting some criticisms against syntactically transparent lexical decomposition

“God wasn’t just fooling around when He made morphemes.

The commandment that Moses forgot: THOU SHALT NOT TAKE THE SURFACE LEXICON IN VAIN. Occam’s Razor commends this, and so, it appears, do the data”.

Fodor & Lepore (199?: 9)

As pointed out in section 1.5, some confusing ideas appear to be lurking around in the literature regarding the relation of Hale & Keyser’s theory of l-syntax to the Generative Semantics program. In order to contribute to avoiding possible misunderstandings, in this appendix I will show that Fodor’s (1970) arguments against the lexical decomposition argued for by generative semanticists do not apply to the theory I presented in section 1.4 above. On the other hand, I will also show that Jackendoff’s (1997a: 231-232) criticisms of Hale & Keyser (1993) are mostly due to his misconception of their theory.

Fodor’s (1970) paper is perhaps the most cited reference to discredit the syntactically based lexical decomposition of words. In that paper he presented his famous “Three Reasons for not Deriving *Kill* from *Cause to Die*”. Let us see the First One. Consider the following examples:

- (93) a. John caused Mary to die and it surprised me that he did so.
b. John caused Mary to die and it surprised me that she did so.

According to Fodor (1970),⁷³ “if both ‘cause to die’ and ‘Mary die’ are constituents in the deep structure of ‘John killed Mary’, we might expect that the *do-so* transformation should operate on ‘John killed Mary’ to produce both (94a), which is wellformed, and (94b) which, however, is not (...) In short, it argues against the presence of a constituent ‘Mary die’ in the deep structure of ‘John killed Mary’ that there is no wellformed sentence (94b) in which that constituent has been replaced by ‘do so’”.

- (94) a. John killed Mary and it surprised me that he did so.
 b. *John killed Mary and it surprised me that she did so.

Fodor's Second Reason is based on the scope possibilities of time modifiers. Consider the following examples:

- (95) a. Floyd caused the glass to melt on Sunday by heating it on Saturday.
 b. *Floyd melted the glass on Sunday by heating it on Saturday.
- (96) a. John caused Bill to die on Sunday by stabbing him on Saturday.
 b. *John killed Bill on Sunday by stabbing him on Saturday.

According to Fodor, words like *melt* or *kill* resist two or more of these time modifiers "simply because they lack internal structures on which to hang them. We can have two time modifiers on (95a) simply because there are two verbs capable of receiving them. But there is only one verb available for modification in *Floyd melted the glass*". *Mutatis mutandis*, the same points apply to *kill* vs. *cause to die*. The general conclusion to be drawn from the data in (95)-(96) is that words like *kill* or *melt* lack internal complex structure.

Finally, the Third Reason concerns the scope possibilities of instrumental (or means) adverbials. Consider the following examples:

- (97) a. John caused Bill to die by swallowing his tongue.
 b. John killed Bill by swallowing his tongue.
- (98) a. (John caused (Bill die)) (by (Bill swallows Bill's tongue))
 b. (John caused (Bill die)) (by (John swallows Bill's tongue))

According to Fodor, "(97a) is ambiguous, just as the principle that any deep subject can be shared by an instrumental adverbial requires. That is, (97a) has the source (98a) as well as the source (98b). (...) Now if we suppose that *predicate raising* and *lexicalization* are transformations, we can derive not only, (97a), but also

⁷³ Fodor's numeration of the examples has been changed.

(97b) from (98a). (...) But this will not do since (97b), unlike (97a), is clearly univocal and it is clearly John rather than Bill who does the swallowing.”

In other words, there are only two instrumental adverb positions in *John caused Bill to die* but only one in *John killed Bill*. According to Fodor, this follows from the simple fact that the former is a two verb sentence, while the latter is a one verb sentence.

As noted above, it is important to review these ‘Three Reasons’ because these are often considered the crucial reference when criticizing any syntactic decomposition of words. Thus, for example, Geoffrey K. Pullum in his (1996) review of Hale & Keyser’s (1993) article says:

(99) “Hale & Keyser have revived syntactic lexical decomposition: their intralexical syntax looks a lot like 1968 prelexical syntax (see, for example, McCawley 1968) (...) Sadly, Hale & Keyser follow Chomsky’s citation practice acknowledgment of the generative semantics literature of the late 1960s is missing (*sic*: JM). And here we encounter a good example of the danger of wheel-reinvention that I mentioned above. ANTI-generative semantics critiques of lexical decomposition in the 1970s, though relevant, are also ignored by Hale & Keyser. Fodor’s (1970) arguments against deriving *kill* from *cause to die* are as applicable to Hale & Keyser’s structures as to McCawley’s. (...) The point is that Fodor’s reasons for not positing extra abstract verb nodes should be addressed, not ignored”.

Pullum (1996: 143)

First of all, let me point out that Pullum’s criticism is not fair. Hale & Keyser are *not* unaware of the relation of their program to that put forward by generative semanticists. In fact, they are quite explicit in this respect in a *previous* paper to that reviewed by Pullum:

(100) “When we claim that the English verb *saddle* has underlying it a syntactic representation of the form depicted in (X), it is clear that we are accepting -to some extent, at least- a viewpoint represented in the Generative Semantics framework, as in the work of Lakoff (1971) and McCawley (1971), and others. The Generative Semantics program was motivated, in part, by a vision of the

nature of lexical items which is essentially the same as ours. This is the idea that the notion ‘possible lexical item’ (...) is defined, or constrained, by certain principles of grammar which also determine the well-formedness of syntactic structures (...) And in the course of this discussion, we will address a ‘problem’ with this position, in the hopes that we can convince the reader that it is not a problem of grammar and can, therefore, safely be set aside here.

The problem we are referring to here is represented by the one which was so eloquently formulated by Fodor (1970) in his famous arguments against deriving *kill* from *cause to die*. His arguments, of course, had to do with the proposal that the simple verb *kill* was derived from a ‘deep structure’ syntactic representation underlying *cause to die* –and the arguments seem correct, for the position he was criticizing. The arguments do not carry over to the proposal we are entertaining here, however, since the verbs derived by incorporation in the lexicon are themselves input to d-structure. Thus, for example, the verbs *shelve* and *saddle*, and the like, are lexical items in the true sense, and as such, each necessarily involves a *single* ‘event position’ (cf. Higginbotham (1985)) in its predicate argument structure. Consequently, arguments based on the observation that a complex sentence at d-structure involves multiple events are irrelevant to a proposal to the effect that a lexical item like *saddle* involves a system of relations like that embodied in (X)”. Hale & Keyser (1992: 118)

Hale & Keyser (1992) argued then that Fodor’s (1970) arguments do not carry over to their proposal. It is the case that they did not review them *again* in their (1993) paper. Unfortunately, Pullum’s (1996) review neglected this important point.

On the other hand, it is interesting to note what Fodor & Lepore (199?: 2) say about Hale & Keyser’s move in (100) to avoid Fodor’s arguments :

(101) “We find this text hard to interpret (...) It may be that Hale & Keyser are suggesting a reply: namely, that the principles that semantically interpret scope relations apply after lexicalization in the course of grammatical derivations (...) it appears to be ad hoc for them to do so barring some explanation of why scope –unlike, presumably, the rest of semantics- should be insensitive to the structures that prelexical syntax is supposed to generate.

Or it may be that Hale & Keyser are suggesting something really quite radical: Viz., that all principles of semantic interpretation are ipso facto insensitive to prelexical syntactic representations (...) if semantics is entirely blind to prelexical syntax, doesn't that rather sort of, a little bit, suggest that maybe prelexical syntax isn't there?" Fodor & Lepore (199?: 2)

Let me then try to explain what I think is at issue in (100). It seems to me that Hale & Keyser's distinction between l(exical)-syntax and s(entential)-syntax is crucial for them to avoid Fodor's arguments. It is the case that the verbs *saddle*, *shelve* and the like behave as atomic lexical units at s-syntax. That is, at this level the verb *saddle* is just an atomic lexical verbal head *plus* its 'extended projection' (among others, TP being involved). Accordingly, a sentence like *John saddled the horse* involves only one clause because there is only *one* event position to be bound by only one Tense (cf. Higginbotham (1985)). Given this, notice that Fodor & Lepore miss the point when saying "Hale & Keyser offer no reason for doubting that the scope test is a reliable diagnostic of the clausal structure of abstract grammatical (including lexical) representations" (p. 2). However, it is the case that *saddle* and the like do not involve *clausal* structure at l-syntax. So the scope test that affects clausal structure (e.g., that carried out by means of time or instrumental modifiers) do not apply to l-syntax.

On the other hand, it is interesting to point out that, besides temporal or instrumental modifiers like those reviewed above, which involve 'clausal structure', there are other kinds of adverbials that have been argued to modify internal lexical relations. Accordingly, it appears to be the case that a distinction must be drawn between those modifiers acting over s-sentential structures (e.g., temporal modifiers) and those modifiers acting over l-syntactic structures. Concerning the latter, Bosque and P.J. Masullo's (1998) discuss one interesting case involving internal verbal quantification:

- (102) a. Sangrar *mucho* (lit.: 'Bleed a lot')
b. Viajar *mucho* (lit.: 'Travel a lot')

Basing their analysis on Hale & Keyser’s theory of lexical syntax, Bosque & Masullo introduce quantification into the lexical syntactic representations. Thus, for example, they posit that “degree quantification on unergatives is interpreted as quantification of the inner nominal standing for the result or product of the activity”. The lexical syntactic structure they propose for (102a) is the one in (103), where movement takes place from N to Q to V:

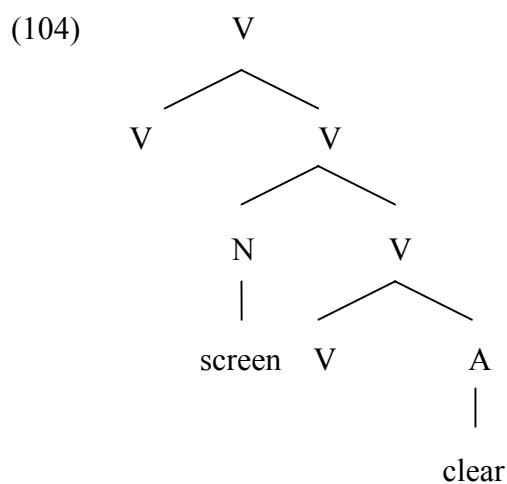
(103) [VP [VP V sangrar_j [QP [Q° e_{i,j}] [N_j]]] mucho_i]

Notice then that, in order to explain the scope of *mucho* in (103), it is necessary to decompose the word *sangrar*. Thus, it is clear that *sangrar* (‘to bleed’) has internal complex structure, contrary to what Fodor’s arguments point to.

Moreover, as noted by Bosque & Masullo, the phrases in (102) are ambiguous: e.g., besides its degree quantification reading, *mucho* (‘a lot’) can also be interpreted as a temporal adverbial, in which case it would be acting as a sentential modifier.

All in all, I think that the relevant conclusion worth being drawn from the present review of Fodor’s arguments is the following one: the fact that *kill* can function as a *single* event with respect to its temporal reference does not imply that it cannot be decomposed into a complex argument structure.

This said, I would like to point out a non-trivial observation concerning Hale & Keyser’s (1993f) analysis of causative verbs like *clear* (cf. (4c), repeated below in (104)), which are said to involve two Vs:



Following Hale & Keyser (1993: 72-73), one could argue that two dynamic events can be said to be associated to the lexical syntactic structure in (104): one associated to the upper verb (i.e, the causative event), and another one to the inner verb (i.e., the change event). As noted above, the only way for Hale & Keyser (1992, 1993) to avoid Fodor’s arguments was their insisting in the l-syntax vs. s-syntax distinction, this being the price they had to pay in order to avoid to open a Pandora’s box again. However, it is the case that many generative syntacticians (Chomsky included)⁷⁴ are not happy with the distinction between l(exical)-syntax and s(entential)-syntax.⁷⁵

Notice also that the theory presented in section 1.4 does not force me to assume such a distinction. As noted above, recall that the syntactic argument structures in (48), (49) and (50) are each provided with only *one* eventive relation. Accordingly, the {transitive/"unaccusative"}⁷⁶ structure lexically associated to *clear* involves only one eventive relation: recall that the typical bieventive representation (i.e., CAUSE-BECOME) of a causative verb of change of state (i.e., ‘to cause X to become Z’) is not encoded as such in the syntax (cf. Harley (1995, 2002)).

- (105) a. [F John [X1 [+R] [X2 the screen [X2 [+r] CLEAR]]]]
 b. [F PRO_i [X1 [+R] [X2 the screen_i [X2 [+r] CLEAR]]]]

To conclude this appendix, I will review Jackendoff’s (1997a: 231-232) criticism of Hale & Keyser (1993). According to him, “Hale & Keyser’s approach is subject to many of the same objections that Chomsky (1970) raised to the Generative Semantics treatment of lexical semantics” (p. 231). Jackendoff presents the following five arguments:

- (106) “a. *Shelve* means more than ‘put on a shelf’. One can’t shelve a single pot or dish, for example (...)This is not predicted by the syntax, so there must be

⁷⁴ Cf. Chomsky (1995: chap. 3).

⁷⁵ Cf. also Uriagereka (1998a,b) for some relevant remarks on Hale & Keyser’s theory of l-syntax.

⁷⁶ Quotations marks are added here, since both variants can be argued to involve a *dyadic* use of the verb in the syntax (cf. *supra* for our adaption of Mendikoetxea’s (2000) analysis to the present framework).

some aspects of the semantics of *shelve* that go beyond the expressive power of syntactic representations (...).

b. Hale & Keyser do not address how the phonological form is realized as *shelve* rather than *shelf* (...)

c. *Widen* and *thin* are supposed to be derived from syntactic structures similar to $\langle [_{VP} [_{V1} e] NP [_{VP} [_{V2} e] [_{PP} [P e] [_{NP} shelf]]]] \rangle$ with the AP *wide* and *thin* at the bottom instead of the PP [*e shelf*] (i.e., ‘cause to become wide’). *Grow* has the same thematic roles as these verbs, as can be seen especially from its similarity to the deadjectival *enlarge*. But there is no adjective that can be used as the base for this structure (...).

d. More acutely, at this grain of distinctions, *kill* has the same semantic structure as *widen*; that is, means ‘cause to become dead’. UTAH therefore requires that *kill* be derived from the same syntactic structure. In other words, we are directly back in the world of Generative Semantics (McCawley 1968)). Although I agree with the *semantic* insights that Generative Semantics sought to express, the possibility of expressing them by syntactic means has been largely discredited. (...).

e. Hale & Keyser’s proposal claims that the NP *shelf* satisfies the Location role in *We shelved the books*. However, *We shelved the books on the top shelf* has an overt Location, hence a double filling of the Location role. This of course violates UTAH, since it is impossible for two different NPs with the same theta-role to be in the same underlying syntactic position. In addition it violates the theta-criterion; it should be as bad as, say **He opened the door with a key with a skeleton key* (...).”

Jackendoff (1997a: 231-232)

Unfortunately, as Pullum, Jackendoff appears to equate Hale & Keyser’s (1993) theory of l-syntax with the Generative Semantics program. As shown above, this is a simplistic and in fact incorrect view: Unlike generative semanticists, Hale & Keyser (1993) did not pretend to associate *all* the meaning to their lexical-syntactic structures. Be this as it may, in (107) I take up each of his arguments in (106) separately.

- (107) a. The first problem raised by Jackendoff is *already* noted by Hale & Keyser (1993: 105; fn. 7): “(...) We do not intend to imply that a conflation like *shelve* “means” the same thing as its analytic paraphrase *put on a shelf* (cf. *put the sand on a shelf, shelve the sand*). We maintain simply that they share the same LRS representation (a claim that could be wrong, to be sure) (...)”. Unfortunately, this is asserted in a footnote (overlooked by Jackendoff).

Moreover, let me point out that this is a problem that they addressed in a previous paper to that reviewed by Jackendoff, which shows that Hale & Keyser *are* aware of the problem noted by Jackendoff. According to Hale & Keyser (1992: 118-119): “(...) if one puts a saddle on backwards, upside down, uncinched, without saddle blankets, or any one of an indefinite number of other unacceptable ways, the event simply does not count as an instance of *saddling the horse* (...). The solution to this problem, we feel, has to do with the proper apportionment of those aspects of lexical items commonly referred to as ‘meaning’. In an important sense, the problem exists precisely because we are dealing with a *lexical* process. A central property of a lexical item is that it is a ‘name’. The English verb *saddle* ‘names’ a class of events, and the task of learning how to use the verb properly –in the sense of using it with the proper reference, as opposed to using it properly in the grammar, as a simple transitive verb- implicates the essentially ethnographic or cultural problem of determining what belongs in the class of events named by the verb. This is not the grammarian’s problem; rather, it belongs to the cultural encyclopedia”.

I think that Hale & Keyser’s (1992; 1993) point is quite clear. They do *not* posit that *John shelved the books* and *John put the books on the shelf* “mean” the same. They merely argue that they have common lexical relational structures. Quite clearly, Jackendoff missed the point in his argument expressed in (100a).

- b. Concerning the second argument, let me confess that I am unable to see its relevance to Hale & Keyser’s theory of l-syntax. Given the fact that the noun *shelf* and the verb *to shelve* have different lexical entries (even though related ones), what is the problem in assuming that each item has its idiosyncratic (i.e., lexically listed) phonological form?.

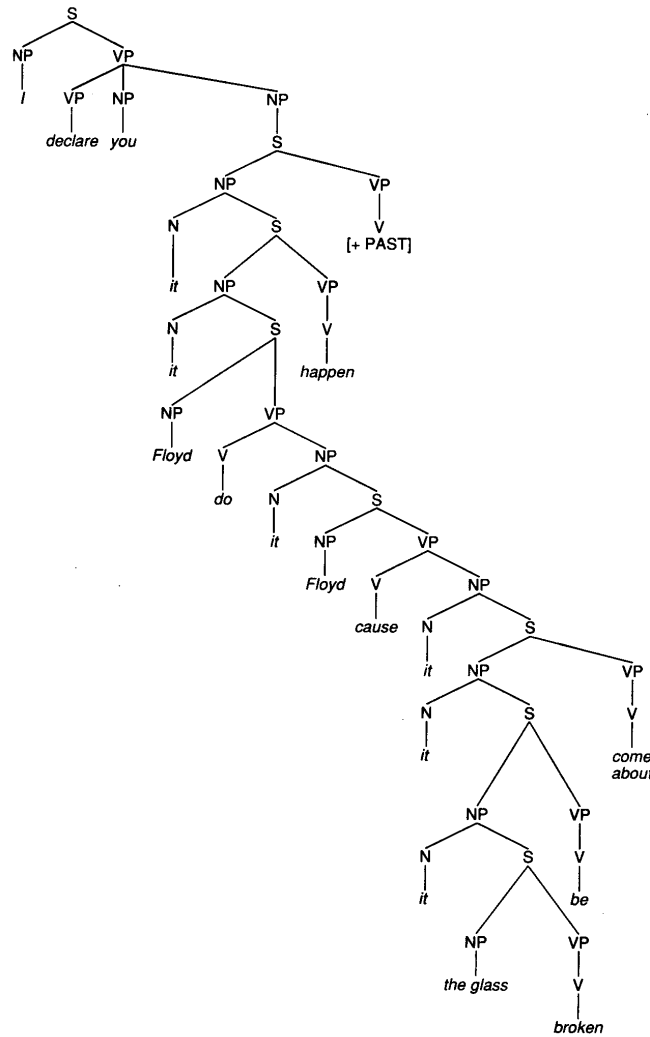
c. The third argument is also due to Jackendoff's overlooking Hale & Keyser's (1993: 105; fn. 6) crucial footnote: "In LRS representations, *of course* (<emphasis added: JM>) we are dealing with the universal categories, whatever they turn out to be. Their realization in individual languages as nouns, verbs, and so on, is a parametric matter. Thus, the English possessive verb *have*, for example, is probably a realization of the universal category P, not V (...)"

Unfortunately, Jackendoff fell into the confusion alluded to in Hale & Keyser (1992: 119): "At the risk of occasional confusion, we employ the notation traditional in representing d- and s-structures. Thus, the 'major' (sometimes called 'lexical') categories found at LRS are V, N, A, P, as usual. (...) For the present, however, we will continue to use the familiar notation, with the understanding (...) that we are dealing with the elements which define well-formed LRS representations, rather than with the identically notated elements which realize them at d- and s-structure, subject to parameterization for particular language types".

With the latter caveats in mind, notice that Jackendoff's point that there is no adjective that can be used as the base for the structure of *grow* is not to be seen as a serious problem for Hale & Keyser (1993). Cf. section 1.3 above.

d. The fourth argument presented by Jackendoff is based on the same misconception pointed out in (107a). Clearly, Jackendoff made a mistake in merely equating Hale & Keyser's (1993) 'lexical syntactic structure' with 'semantic structure'. Such an equation could be said to be valid for the Generative Semantics program, but not for Hale & Keyser's (1993) theory of l-syntax. As noted above, to assert that those adopting a minimal syntactic decomposition are doing the same generative semanticists did in the 1960s and 1970s is not but a misconception of Hale & Keyser's theory. It should be clear that they are not syntacticizing the semantic "beasts" of generative semanticists. For example, compare {(37b)/(38)} above with the syntactic and semantic structure in (107d'), argued for by Lakoff and Ross *in illo tempore*.

(107d') Floyd broke the glass.



apud Newmeyer (1996: 103; ex. (3))

Quite interestingly, notice Jackendoff's acknowledgment in (106d): "I agree with the *semantic* insights that Generative Semantics sought to express". This notwithstanding, let me synthesize my reply into the following question: what do we gain by transferring (part of those) syntactic beasts similar to those put forward by generative semanticists into a CS (i.e., non-syntactic) format? To my view, the lack of *explanatory* restrictions in lexical decomposition is the real problem to be solved. Generative semanticists failed in working out the relevant syntactic restrictions on their lexical

decomposition.⁷⁷ Indeed, moving the “insights” alluded to by Jackendoff in (106d) into the CS realm should not free Jackendoff from trying to solve *the* real problem.⁷⁸

e. Let us deal with the fifth argument, which appears to be a very real problem for Hale & Keyser. In fact, this is one of the problems that have often attracted their attention in subsequent works (e.g., cf. Hale & Keyser (1997b) or Hale & Keyser (2000a)).⁷⁹

According to Hale & Keyser (1997b: 42), “in addition to the ‘literal’ meaning implied by the structural relations embodied in the lexical entry we have proposed, there is an additional increment of meaning which we might refer to as ‘adverbial’ or ‘classificatory’. Whatever else it means, *to shelve* means ‘to put something (on a shelf or shelf-like place) in a ‘shelving manner’ (...) here, use of the verb *shelve* requires at most that the object of the preposition be thought of as a kind of shelf, i.e., that it be classifiable’ as a shelf (...) Our suggestion is this. Each denominal verb has an adverbial component and a ‘referential’ component. The referential component is represented by the chain defined by head movement (...)”.

Given this, the gist of their proposal is that in a sentence like *She shelved the book on the top shelf* the nominal component has entirely lost its referential character, this being due to an index-deletion process of the chain alluded to above. While the referential character of the nominal is still present in a sentence like *She shelved the book*, it is argued that the nominal component in *She shelved the book on the top shelf* has entirely lost its referential character. As a result, new lexical material can be inserted into the PP after I-syntax. In the latter sentence “we know that a shelf is present only

⁷⁷ Let me point out that I think that they failed because they neglected the crucial distinction between syntactically transparent semantic construal and non-syntactically transparent conceptual content. Their syntacticizing conceptual content led them to a cul-de-sac.

⁷⁸ Unfortunately, it seems that this task has a secondary status in Jackendoff’s agenda. For example, see Jackendoff (1990: 4): “I consider the state of development of this <the CS: JM> theory to be comparable to the state of generative syntax in the early 1960s (...) As in that period in syntax, the emphasis at the moment is on descriptive power (...) So, although I keep issues of explanation constantly in mind, they are for the moment somewhat secondary to formulating an interesting description of the phenomena”. Quite probably, we are then talking at cross-purposes.

⁷⁹ Here I will limit myself to reviewing Hale & Keyser’s (1997b) solution, because it is worked out on the basis of Hale & Keyser (1993), i.e., the proposal criticized by Jackendoff. However, the interested reader should consult Hale & Keyser (2000a) for a different proposal.

because of the noun *shelf* appearing in the PP. The sentence is as fully grammatical with *windowsill*, *desk*, *mantle*, or *sawhorse* in place of *shelf*' (p. 43).⁸⁰

⁸⁰ See Hale & Keyser (1997b: 42-44) for more details. Cf. the previous footnote.

Chapter 2. Unaccusativity: A relational syntactic and semantic approach

In this chapter I analyze the relational syntax and semantics of unaccusative and unergative verbs. Section 2.1. introduces the so-called ‘Unaccusative Hypothesis’, and offers an account of it in terms of the present theory of argument structure. In particular, it is argued that the unaccusative argument structure involves a syntactically transparent Figure-Ground configuration. In Section 2.2. I provide a relational syntactic and semantic account of the ‘auxiliary selection’ problem. Two approaches to auxiliary selection (an often cited “unaccusative diagnostic”) are also singled out for review: Zaenen’s (1993) approach, which is based on both Dowty’s (1991) theory of proto-roles and Bresnan & Kanerva’s (1989) LFG theory of argument classification, and Sorace’s (2000) semantic approach, which takes gradience effects into account. Quite probably, the latter is the more comprehensive semantic account of auxiliary selection up to the present. I exemplify the theoretical and empirical advantages of my theory of argument structure by providing an explanatory formal account of Sorace’s (2000) descriptively-oriented work. In section 2.3 I offer a case study of what Mateu & Amadas (1999b) called ‘Extended Argument Structure’: it is argued that the progressive construction can be analyzed as involving an unaccusative structure over that argument structure lexically associated to the verbal predicate. One of the main advantages of the present account is that it provides Bolinger’s (1971) insightful descriptive remarks on the English progressive with a more explanatory structural basis. Two alternative approaches (Demirdache & Uribe-Etxebarria’s (2000) syntactic one and Parsons’s (1989) semantic one) are also briefly reviewed in order to show the theoretical and empirical virtues of the present approach. Finally, section 2.4 summarizes the main conclusions.

2.1. The *Unaccusative Hypothesis*

As is well-known, the Unaccusative Hypothesis was first proposed by Perlmutter (1978) within the context of the Relational Grammar framework. He showed that there are intransitive verbs that have an initial 2 (direct object) and others that have an initial 1 (subject). The former were called ‘unaccusative verbs’ and the latter

'unergative verbs'. Burzio (1986) adapted the Unaccusative Hypothesis to the GB framework, and formulated the Ergative Hypothesis, according to which two classes of monadic verbs can be distinguished: the class of 'ergative verbs', which have their single argument in d-structure object position, and the class of 'intransitive verbs', which have their single argument in d-structure subject position.

- (1) a. Ergative verb: [S [NP e] [VP V NP]]
b. Intransitive verb: [S NP [VP V]]

Burzio showed that there is a correlation between the fact that ergative verbs do not assign accusative Case to their direct object and the fact that they assign no theta-role to their subject position. This correlation came to be known as *Burzio's Generalization*.⁸¹

In particular, in this chapter I will concentrate on showing the advantages of assuming the distinction in (2) (cf. (66) in the previous chapter) when working out the semantic determinants of the syntactic distinction between unergative and unaccusative verbs.⁸²

- (2) Meaning is a function of both (non-syntactically transparent) *conceptual content* and (syntactically transparent) *semantic construal*.

On the basis of the distinction in (2), I will review Levin & Rappaport Hovav's (1995: 5) following words:

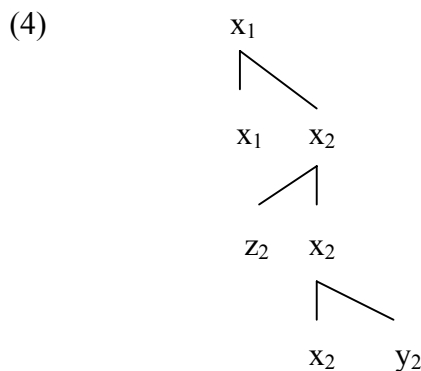
- (3) "The hypothesis that the classification of verbs as unergative or unaccusative is predictable on the basis of meaning in no way implies that all unaccusative verbs or all unergative verbs represent a unified semantic class (...) *Given the many-to-one character of the mapping from lexical semantics to syntax*

⁸¹ See Levin & Rappaport Hovav (1995) and the references they cite in their chapter 1 for a more detailed presentation of the Unaccusative Hypothesis. See also Reuland (ed.) (2000) for recent views on Burzio's generalization.

⁸² See Levin & Rappaport Hovav (1995) for arguments in favor of Perlmutter's (1978) original hypothesis that unaccusativity is syntactically represented but semantically determined.

(emphasis added: JM), there is no reason to assume that all verbs that have the syntactic properties attributed to unaccusative verbs will form a semantically homogeneous class.”

To be sure, unaccusative verbs cannot be said to represent a unified semantic class if only their conceptual content is taken into account.⁸³ Our limiting the semantic aspect to conceptual content notions would indeed force us to posit a many-to-one character of the syntax-semantics interface. However, in the previous chapter I have been arguing for a uniform/simple character of the syntax-semantics interface on the basis of the distinction in (2). That is to say, it is the (syntactically transparent) structural aspect of semantic construal, *not* the (non-syntactically transparent) aspect of conceptual content, what is directly relevant at the syntax-semantics interface. Accordingly, I have posited a uniform (syntactically transparent) argument structure for *all* unaccusative verbs, the one depicted in (50) in chapter 1, repeated in (4) below.



Recall that in this case x_1 is to be regarded as a *transitional eventive relation*, whose $[\pm T]$ semantic feature is assigned to the verb that enters into the unaccusative construction in (4). $[+T]$ is to be read as "positive semantic value associated to the

⁸³ According to Levin & Rappaport Hovav (1995), this class includes the following major lexical semantic classes: (i) verbs of inherently directed motion: *arrive, come, enter, fall, go*, etc.; (ii) nonagentive verbs of manner of motion: *bounce, move, roll, rotate, spin*, etc.; (iii) verbs of existence: *exist, extend, remain, reside, stay*, etc.; (iv) verbs of appearance: *appear, awake, develop, grow, rise*, etc.; (v) verbs of occurrence: *ensue, happen, occur, recur, transpire*, etc.; (vi) verbs of spatial configuration: *lean, lie, rest, sit, stand*, etc.; (vii) verbs of disappearance: *die, disappear, expire, perish, vanish*, etc.; (viii) externally caused verbs of change of state (inchoative version): *bend, break, clear, freeze, weaken* and a large etc.

See also Gràcia (1989a,b), Masullo (1999), Mendikoetxea (1999), and Rosselló (2002) for four excellent descriptive accounts of unaccusative verbs.

transitional relation": accordingly, it is assigned to those unaccusative verbs expressing *change*. By contrast, [-T] is to be read as "negative semantic value associated to the transitional relation": accordingly, it is assigned to those unaccusative verbs expressing *state*.⁸⁴

In turn, in (4) x_1 selects the non-eventive relation x_2 , whose specifier and complement are interpreted as 'Figure' and 'Ground', respectively.⁸⁵ The spatial relation x_2 is argued to be associated to the $[\pm r]$ semantic feature: [+r] and [-r] are to be associated to Hale's (1986) 'terminal coincidence relation' and 'central coincidence relation', respectively. According to Hale (1986), a terminal coincidence relation involves a coincidence between one edge or *terminus* of the theme/figure's path and the place, while a central coincidence relation involves a coincidence between the center of the theme/figure and the center of the place.⁸⁶

As argued in section 1.2, the linguistically relevant semantic notions 'terminal coincidence relation' (prototypically exemplified by the preposition *to*) and 'central coincidence relation' (prototypically exemplified by the preposition *with*) are to be associated to aspectual notions of lexical 'telicity' and 'atelicity', respectively. Quite importantly, notice that the framework assumed here allows us to view the so-called

⁸⁴ Accordingly, the [-T] feature is assigned to 'verbs of existence' and those 'verbs of spatial configuration' expressing a stative situation (cf. *infra*). More generally, the [+T] feature is assigned to the rest of the lexical semantic classes of verbs mentioned in the previous footnote.

One caveat is in order here concerning 'verbs of spatial configuration': as noted, I will assume that they are assigned the [-T] semantic feature only when they involve a simple static position (e.g., *The papers lay on Beth's desk*), the [+T] feature being assigned to them when a directed motion is involved (e.g., *Malka's students all stood up*). See Levin & Rappaport Hovav (1995) for arguments in favor of considering them as unaccusative verbs in these two senses. Otherwise (i.e., when an internal cause is involved: e.g., *Tova stood alone deliberately*), these verbs can be shown to behave as normal unergatives. Assuming that Levin & Rappaport Hovav (1995) are right, I will not review their arguments here.

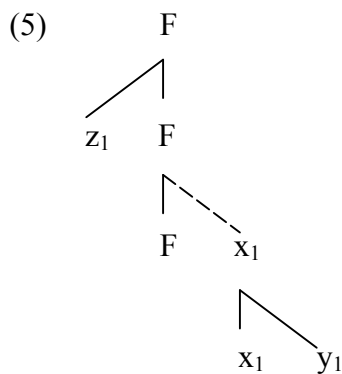
⁸⁵ It is interesting to notice that (4) allows us to account for a unified version of Gruber's (1965) disjunctive definition of *Theme* (to be subsumed under the *Figure* role here): the object in motion *or* being located. In (4) *Theme* is nothing but the specifier of the spatial relation x_2 .

⁸⁶ From a cursory look at the lexical semantic classes of unaccusative verbs, it is clear that, if we want to maintain the same syntactically transparent Figure-Ground configuration for all unaccusative verbs (cf. (4)), $[\pm r]$ is to be argued to encode not only basic (i.e., 'physical') spatial relations, but (spatially-derived) abstract relations. Thus, for example, the argument structure of (i) and (ii) is identical, the linguistically irrelevant differences being attributed here to the different conceptual material associated to the Ground element.

(i) Octavius went to Tarraco.
(ii) Octavius awoke.
(iii) $[x_1 [+T] [x_2 \text{ Octavius } [x_2 [+r] \text{ Tarraco}]]]$
(iv) $[x_1 [+T] [x_2 \text{ Octavius } [x_2 [+r] (A)WAKE]]]$

aktionsart (i.e., lexical aspect) as a derived notion.⁸⁷ Regarding the *aktionsart* of unaccusative verbs, let us briefly exemplify its derived status with a couple of examples: (i) the descriptive fact that predicates such as *arrive* or *break* are [+telic] predicates amounts to the explanatory fact that they all involve a positive transition (i.e., [+T]) and a terminal coincidence relation (i.e., [+r]) between two non-relational elements; (ii) the descriptive fact that predicates such as *exist* or *lie* are [-telic] predicates amounts to the explanatory fact that they all involve a negative transition (i.e., [-T]) and a central coincidence relation (i.e., [-r]) between two non-relational elements.

Similarly, I also posited a uniform (syntactically transparent) argument structure for *all* unergative verbs: cf. the one depicted in (49) in chapter 1, repeated in (5) below.



Recall that in this case x_1 is to be regarded as a *source eventive relation*, whose $[\pm R]$ semantic feature is assigned to the verb that enters into the unergative construction in (5). [+R] is to be read as "positive semantic value associated to the source relation": accordingly, it is assigned to those unergative verbs expressing a high flow of volitional energy or *agentivity*. The spec in (5), which is introduced by the relevant *Functional projection* (cf. Chomsky (1995)), is then interpreted as an agentive Originator. By contrast, [-R] is to be read as "negative semantic value associated to the source relation": accordingly, it is assigned to those

⁸⁷ Basically, cf. Dowty (1979), Jackendoff (1991,1996), Pustejovsky (1991, 1995), and Rappaport Hovav & Levin (1998), *inter alia*, for some attempts to derive Vendler's (1967) aspectual classification of verbs from more primitive notions; cf. also Tenny (1994) and Verkuyl (1993) for two different approaches to aspectuality.

unergative verbs expressing a low degree of volitional energy. The spec in (5) is then interpreted as a non-agentive Originator.⁸⁸

As pointed out by Hale & Keyser (1993), unergative verbs can be typically regarded as 'creation verbs'. Accordingly, the non-relational element y_1 is to be seen as the 'created object'. However, following Harley (2001), here I will call it the 'Incremental Theme', since it appears to 'measure out' the event associated to the unergative verbal head (cf. Tenny (1994) for a different use of this term).

As emphasized by Hale & Keyser (1993f), the presence of the non-relational element y_1 as complement of unergative verbs can be empirically motivated on the basis of languages like Basque, where those verbs typically correspond to the *N + egin* ('do/make') construction: cf. the examples in (83) in section 1.5, repeated in (6) below. Following Hale & Keyser, recall that we have posited that English unergative verbs can be properly regarded as the 'synthetic' (i.e., conflated) counterpart of their corresponding 'analytic' (i.e., more transparent) version in Basque.

- (6) a. barre egin ('laugh do/make', i.e., 'to laugh') (Basque)
 e. lo egin ('sleep do/make', i.e., 'to sleep')
 f. zurrunga egin ('snore do/make', i.e., 'to snore')
 g. hitz egin ('word do/make', i.e., 'to speak')

After having briefly presented the theoretical basis for a *unified* approach to the relational syntax *and* semantics of both unaccusative and unergative verbs, in the following section I will concentrate on analyzing one of those often cited "unaccusative diagnostics" (i.e., those tests used to distinguish between unaccusative and unergative verbs):⁸⁹ the auxiliary selection test.

⁸⁸ [+R] is assigned to those unergative verbs that typically express a controlled/volitional/agentive process (e.g., *climb, dance, sail, talk, work*, etc.), while [-R] is assigned to those unergative verbs that typically express an uncontrolled/non-volitional/non-agentive process (e.g., *bleed, flash, rumble, shine, sweat*, etc.).

⁸⁹ See chapter 4 below for an analysis of another unaccusative diagnostic (i.e., the resultative construction), where I offer a reply to Rappaport Hovav & Levin's (2001) event structure account. See also Mateu (1997) for a revision of two other unaccusative diagnostics: e.g., the prenominal participial modification and the causative alternation. For a comprehensive revision of the literature on 'unaccusative diagnostics', see Levin & Rappaport Hovav (1995) and the references cited therein. See also Legendre's (1989) R<relational> G<grammar> approach, where nine tests are worked out in order to know if a verb is unaccusative in French. According to her, a verb is unaccusative if it satisfies at least one of these tests; conversely, a verb is unergative if it fails all the tests.

Before dealing with this test, let me make two important remarks:

(i) Since I assume the existence of a strong homomorphism between the syntax and semantics of argument structure configurations (cf. chapter 1), I posit that unaccusativity is syntactically *and* semantically represented.⁹⁰ Hence I do not agree with proponents of the so-called “semantic approach” (e.g., cf. Van Valin (1990), Dowty (1991), Seibert (1992, 1993), or Zaenen (1993), *inter alia*), who deny that unaccusativity is syntactically encoded, nor do I agree with proponents of the so-called “syntactic approach” (e.g., cf. Rosen (1984), Burzio (1986), Legendre (1989), or Perlmutter (1989), *inter alia*), who deny that unaccusativity is fully semantically predictable.

(ii) My main motivation for concentrating on the auxiliary selection test here is that it allows me to show the relevance of the distinction in (2) in quite a clear way. As we will see below, in their semantic accounts of auxiliary selection, both Zaenen (1993) and Sorace (2000) put too much emphasis on two aspects of meaning that belong to what I have been referring to as (non-syntactically transparent) conceptual content: Zaenen bases her semantic analysis of auxiliary selection on Dowty's (1991) account of proto-roles, while Sorace puts too much emphasis on the gradiency aspects of meaning related to what she calls "Auxiliary Selection Hierarchy" (cf. *infra*). To be sure, prototypicality and gradiency can be said to be relevant when characterizing the conceptual semantics of verbs, but I will show that it is a *discrete* dimension of meaning, i.e., the one concerning (syntactically transparent) semantic construal, that can be argued to be directly relevant to determining auxiliary selection.⁹¹

⁹⁰ Note that my present hypothesis does only partly coincide with Levin & Rappaport Hovav's (1995) hypothesis, the same as that formulated by Perlmutter (1978): unaccusativity is syntactically *represented* and semantically *determined* (<their emphasis: L&RH (1995: 4)>). While we all agree with the first part of this hypothesis, we disagree with respect to what means “semantically determined”. Since Perlmutter and Levin & Rappaport Hovav do not believe in a unified semantic approach to unaccusativity, they only postulate that it is semantically *predictable* (Perlmutter) or semantically *determined* (Levin & Rappaport Hovav). By contrast, as an example of the strong homomorphism concerning the structural representation of argument structure, I posit that unaccusative verbs are always *represented* via a (syntactically transparent) Figure-Ground configuration (cf. (4)).

⁹¹ See also Lieber & Baayen (1997) for a C<onceptual> S<emantics>-approach to the auxiliary selection problem in Dutch. According to them, the relevant semantic principle involved in BE (*zijn*) selection is a feature of meaning [+IEPS] for 'inferable eventual position or state'. I will not fully review their Jackendovian approach here (but cf. *infra*), since Hoekstra wrote an excellent reply article to their work: cf. Hoekstra (1999). As will be clear below, the influence of Hoekstra's (1984f.)

2.2. Auxiliary selection revisited

As is well-known, many languages use different auxiliaries to form the perfect of intransitive verbs (e.g., Italian: *avere/essere*; Dutch: *hebben/zijn*; German: *haben/sein*). Concerning the auxiliary selection of intransitive verbs, the descriptive generalization that has been drawn is that while unergative verbs select *avere/hebben/haben* (say, *HAVE*), unaccusative verbs select *essere/zijn/sein* (say, *BE*). The proponents of the syntactic approach to unaccusativity have claimed that this basic generalization cannot be characterized in terms of meaning alone. Thus, they have proposed that the explanation is syntactic: unergative verbs select *HAVE* since their only argument corresponds to an initial subject in Relational Grammar (RG) terms, or, alternatively, since it occupies a D-Structure subject position (or an external argument slot in P<redicate>A<rgument>S<tructure>) in GB terms. On the other hand, unaccusative verbs select *BE* since their argument corresponds to an initial direct object in RG terms, or, alternatively, since it occupies a D-Structure object position (or a direct internal argument slot in PAS) in GB terms.⁹²

After giving a large list of intransitive verbs (thirty-four “*avere* verbs” and thirty-four “*essere* verbs”), Rosen (1984: 44-45) concludes that “the contrast between (7) and (8)^{<93>} has vaguely discernible semantic correlates, yet we cannot state a semantic criterion that actually works: not animacy of the argument, not agentive or volitional meaning, nor existential or presentational meaning. Auxiliary

work on my conception of argument structure is evident (e.g., cf. Mateu (2001c)). No surprise then that I agree with Hoekstra (1999: 83) that there is a semantics that can be expressed in a syntactic format in quite an homomorphic/uniform way. Due to my assuming a version of such an homomorphism, it should be clear that I have no problem in accepting Hoekstra's (1984, 1999) proposal that it is the syntactic configuration involved in the representation of unaccusativity that is crucially relevant for BE-selection. As noted, here I would like to limit my contribution to showing how the descriptive insights from the semantic accounts of auxiliary selection can be made compatible with Hoekstra's explanatory syntactic account: to be sure, recognizing the importance of the crucial distinction in (2) would be a good starting point to resettle the debate in a more adequate perspective. Given this, here I will not review the syntactic approaches to auxiliary selection (e.g., cf. Guéron (1994), Haider & Rindler-Schjerve (1987), Hoekstra (1994, 1999), Kayne (1993), Mahajan (1994), or Perlmutter (1989), among others). When necessary, it will be shown in which points I follow them, and in which ones I diverge from them.

⁹² Basically, cf. Burzio (1986) for a GB approach to the auxiliary selection problem, and Perlmutter (1978, 1989) and Rosen (1984) for a RG approach.

⁹³ The numbers of her examples have been changed.

Selection correlates partially with each of these factors, but it is not directly sensitive to any of them”.⁹⁴

(7) Examples of *avere* verbs

ha sorriso	“smiled”	ha resistito	“resisted”
ha tossito	“coughed”	ha nuotato	“swam”
ha leticato	“quarreled”	ha camminato	“walked”
ha taciuto	“was silent”	ha barcollato	“staggered”
ha dormito	“slept”	ha esitato	“hesitated”
ha assistito	“attended”	ha risposto	“replied”
ha viaggiato	“traveled”	ha partecipato	“participated”
ha scherzato	“joked”	ha sbadigliato	“yawned”
ha barato	“cheated”	ha gesticolato	“gestured”
ha mentito	“lied”	ha chiacchierato	“chatted”
ha lottato	“struggled”	ha telefonato	“telephoned”
ha abortito	“aborted”	ha funzionato	“operated”
ha abbaiato	“barked”	ha peccato	“sinned”
ha ronzato	“buzzed”	ha sanguinato	“bled”
ha civettato	“flirted”	ha scioperato	“went on strike”
ha russato	“snored”	ha collaborato	“collaborated”
ha tremato	“trembled”	ha temporeggiato	“delayed”

(8) Examples of “*essere* verbs”

è caduto	“fell”	è uscito	“went/came out”
è partito	“left”	è sceso	“went/came down”
è tornato	“returned”	è salito	“went/came up”
è rimasto	“remained”	è scappato	“escaped”
è esistito	“existed”	è capitato	“happened”
è cresciuto	“grown”	è risultato	“turned out”
è scoppiato	“exploded”	è diventato	“became”

⁹⁴ The same conclusion is found in Legendre (1989). In her RG-based analysis of the unaccusativity in French, the author concludes: “unaccusativity is a productive syntactic phenomenon with far-reaching consequences for the grammar of French *while its semantic correlations are much less clearcut and productive* <my emphasis: JM>” (p. 154).

è svenuto	“fainted”	è apparso	“appeared”
è crollato	“collapsed”	è sparito	“disappeared”
è morto	“died”	è successo	“happened”
è nato	“was born”	è bastato	“sufficed”
è arrivato	“arrived”	è avvizzito	“withered”
è impazzito	“went crazy”	è ammuffito	“got moldy”
è arrossito	“blushed”	è marcito	“rotted”
è andato	“went”	è scaturito	“welled up”
è venuto	“came”	è zampillato	“spurted”
è entrato	“went/came in”	è trapelato	“leaked out”

Rosen is certainly right when saying that “not animacy of the argument, not agentive or volitional meaning, nor existential or presentational meaning” can be considered valid criteria to determine auxiliary selection. However, from this we must not necessarily conclude, as she does, that “we cannot state a semantic criterion that actually works”. Before drawing this conclusion, firstly we must consider whether it is worth distinguishing which are the possible semantic notions that are relevant at the syntax-semantics interface from which are not. This is an important methodological point that Rosen disregards. To be sure, we can think that these “relevant” semantic notions do not exist, and that all semantic notions are equally irrelevant to that interface. However, it seems to me that this conclusion has been refuted successfully by several works such as Demonte (1994), Levin & Rappaport Hovav (1995), Pinker (1989), Pustejovsky (1991), Tenny (1987, 1994), among others.⁹⁵

On the other hand, accepting Rosen’s claim that there is no systematic way in which semantic relations relate to initial grammatical representations would force us to accept some undesirable consequences. To my mind, the worst consequence of adopting a purely syntactic approach such as Rosen’s is that for each lexical entry of

⁹⁵ A review of the conclusions these works arrive at is beyond the scope of the present work. If the reader does believe that all semantic notions are equally irrelevant (or relevant) to the syntax-semantics interface, (s)he is prayed to take a look at these works.

an unergative or unaccusative verb it must be stipulated how its semantic argument correlates with its corresponding syntactic argument.⁹⁶

However, as Pinker (1989) has shown, the acquisition of argument structure takes place according to certain generalizations that can be established in the semantics-syntax correspondence. Thus, for example, if an intransitive verb can be semantically characterized by the child as a verb of 'change of state', the unmarked possibility is that it will be an unaccusative verb; if an intransitive verb denotes an 'activity', the unmarked possibility is that it will be an unergative verb.⁹⁷

Notice that in the present framework the so-called “syntactically relevant aspects of verb meaning” (e.g., 'change of state', 'activity', etc.) become relevant to syntax because they express notions that can be typically argued to be filtered into

⁹⁶ Moreover, as Levin & Rappaport Hovav (1995: 8) point out, given that a language such as English lacks morphological clues that could distinguish between unaccusative and unergative verbs, “learnability considerations dictate that the distinction must be fully determined by the semantics.”

Note that this statement can be related to Perlmutter & Postal’s (1984) *Universal Alignment Hypothesis*, which claims that initial-stratum grammatical relations are universally predictable from the semantics of a clause. As is well-known, Perlmutter’s (1978) Unaccusative Hypothesis was introduced in the context of this general hypothesis. According to this hypothesis, unergativity and unaccusativity are semantically predictable. Unfortunately, this hypothesis has been challenged by Perlmutter (1989: 66-67): “recent research on the Unaccusative Hypothesis has shown that this is incorrect. One therefore cannot rely on universal or semantic criteria to predict initial unergativity vs. unaccusativity, but must find language-internal evidence for the distinction between initially unergative and unaccusative clauses”.

However, concerning English, a language that lacks morphological evidence regarding the unaccusative/unergative distinction, it is worth recalling what Levin & Rappaport Hovav (1995: 8) say: “it is unlikely that every child learning English will necessarily have access to evidence concerning the behavior of each intransitive verb acquired with respect to the kinds of phenomena that force the postulation of an unaccusative or unergative classification for that verb”. Therefore, at least in English, semantics must be implicated in the unaccusative/unergative distinction. This accepted, note that it would be bizarre to claim that this distinction is semantically determined in English, but not in Italian, a language which has morphological clues (e.g., the *avere/essere* distinction) which are lacking in English.

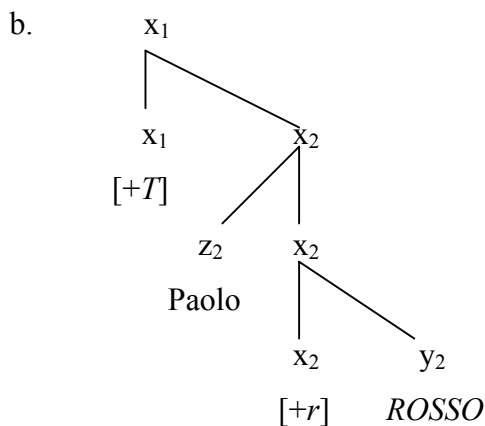
One caveat is in order here: accepting that semantics is crucial when determining the classification of Italian unaccusative/unergative verbs does not imply that morphological clues do not facilitate Italian children’s task, of course.

⁹⁷ In fact, Levin & Rappaport Hovav (1995: 9-10) make use of these semantic notions when refuting Rosen’s observation that predicates that appear to be semantically identical are considered unergative in some languages, and unaccusative in others. They exemplify it with the pair It. *arrossire* and *to blush*. Rosen argues that these verbs are semantically identical (e.g., in her terms both denote a “bodily process”). However, it is the case that the Italian verb is to be classified as unaccusative, while the English verb can be classified as unergative. Levin & Rappaport Hovav’s relevant critique is as follows: “The behavior of these verbs is only problematic for the Unaccusative Hypothesis if the verbs belong to the same syntactically relevant semantic class. In fact, it is unclear whether the notion “bodily process” can be used to define such a class. (...) The concept denoted by the English verb *blush* is open to an activity or change-of-state interpretation, depending on one’s perspective. What is interesting is that the Italian verb *arrossire* “blush” literally means “become red”, suggesting that in Italian this verb can be considered a verb of change of state.”

Cf. section 2.2.4 below for more discussion.

the relational semantics of the argument structures I have postulated. On the other hand, Rosen’s semantic notions such as “bodily process”, “animacy”, or “existential or presentational meaning” are *brute* conceptual notions that are not filtered into the syntactically transparent argument structures. Let me briefly explain it with the Italian example in (9a), which contains the change of state verb *arrossire* (lit. 'become red'): here “change of state” can be argued to be a syntactically relevant semantic notion since the relational semantics that we can draw from (9) involves a positive transitional relation (i.e., [+T]) plus a terminal coincidence relation (i.e., [+r]). Its corresponding argument structure is represented in (9b):

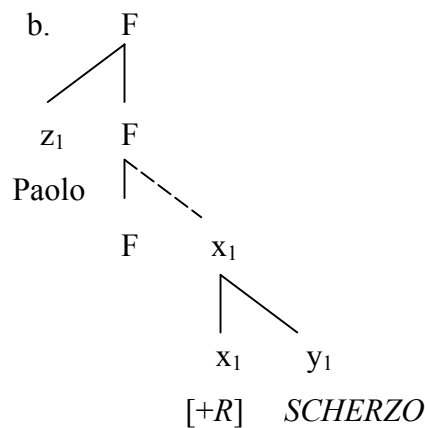
(9) a. Paolo è arrossito ('Paolo blushed')



In (9b) the abstract spatial relation x_2 relates two non-relational elements, *Paolo* (i.e., the Figure) and *ROSSO* (i.e., the Ground). x_2 is assigned the positive value, i.e., the 'terminal coincidence relation'. As noted, such a proposal accounts for why *arrossire* can be descriptively characterized as a '[+telic] unaccusative verb'.

On the other hand, the above-mentioned syntactically relevant semantic notion of 'activity' can also be argued to be filtered into a syntactically transparent relational semantic notion: an unergative verb like that in (10a) involves the source relation x_1 , which is assigned the [+R] semantic feature, this positive assignment being due to the high flow of energy or agentivity involved.

(10) a. Paolo ha scherzato ('Paolo joked')



Accordingly, the relevant semantic generalizations to be drawn are the following ones: (i) all those verbs in (7) selecting *avere* involve an eventive source relation ($[\pm R]$). In descriptive words, all express a 'process'; (ii) all those verbs in (8) selecting *essere* involve an eventive transitional relation ($[\pm T]$) plus a non-eventive relation ($[\pm r]$). In descriptive words, all express a 'change' (of state or position) or a 'state'.

These generalizations are also valid for the following contrast in (11), from which Rosen concludes that the distinction between unaccusative and unergative classes cannot be characterized in terms of meaning alone.

- (11) a. Mario ha continuato. (*è) (Italian)
 “Mario continued”
 b. Il dibattito è continuato. (*ha)
 “The debate continued”

Rosen (1984: 45; ex.(21))

My proposal is that this contrast can be explained if (11a) is regarded as an instantiation of (5), whereas (11b) is considered an instantiation of (4). That is to say, the verb in (11a) involves an eventive source relation, whereas the verb in (11b) involves an eventive transitional relation plus a non-eventive relation.⁹⁸

⁹⁸ See Amadas (1999) for an excellent account of the argument structure of so-called 'aspectual verbs', which is based on Mateu's (1997, 1999) theory of *Relational Semantics*.

Furthermore, another well-known problem in the literature on auxiliary selection comes from examples like the following ones:

- (12) a. dat Jan wandelt (Dutch)
that Jan walks
b. dat Jan (naar Groningen) gewandeld heeft
that Jan to Groningen walked has
c. dat Jan *(naar Groningen) gewandeld is
that Jan to Groningen walked is

Hoekstra (1984: 246; ex. (50))

According to Hoekstra, the change in the auxiliary selection involves a change in meaning: in (12a) and (12b), it is asserted that *Jan* is engaged in a certain *activity*, whereas (12c) crucially specifies a *change* of position of *Jan*, which happens to result from the activity of walking. Accordingly, *hebben* is chosen in (12b) when the 'activity' component is the only one involved. By contrast, *zijn* is chosen in (12c) when the 'change' component is crucially involved, the activity one being secondary in this case.

Furthermore, as shown in (13), the fact that the verb can encode two different syntactically relevant semantic components such as 'activity' and 'change' can also be found in English,⁹⁹ but not in Romance.¹⁰⁰

- (13) Willy wiggled/danced/spun/bounced/jumped into Harriet's arms.

Jackendoff (1990: 223, ex. (29))

⁹⁹ For discussion on English verbs of manner of motion taking telic directional PPs, see also Jackendoff (1990, chapters 5 and 10) and Levin & Rappaport Hovav (1995, chapter 5), among many others.

¹⁰⁰ Cf. Talmy (1985, 1991, 2000) and Carter (1988) for this typological distinction, analyzed in detail in chapter 3 below.

Quite interestingly, as pointed out by Rosen (1984: 66-67 and her footnote 12) and Levin & Rappaport Hovav (1995: 182-186 and their footnote 1), Italian has a small idiosyncratic group of agentive manner of motion verbs (*correre* 'run', *saltare* 'jump', *volare* 'fly' and a few others) which can be shown to be treated as exceptions to Talmy's (1985, 1991) generalization that manner of motion verbs in Romance languages cannot take telic directional phrases. Be this as it may, notice that Italian also follows the relevant/expected generalization with respect to auxiliary selection: *Gianni è (*ha) corso a casa* ('John ran home'); *Gianni ha (*è) corso per due ore* ('John ran for two hours'). That is, when the change of location component is involved, *essere* (BE) is selected. By contrast, when the activity component is involved, *avere* (HAVE) is selected.

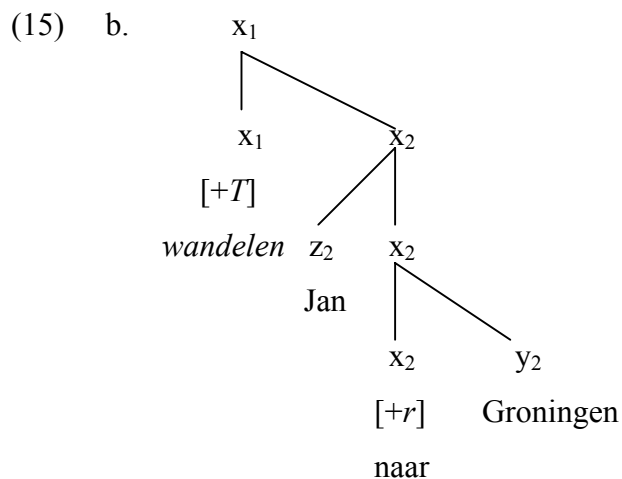
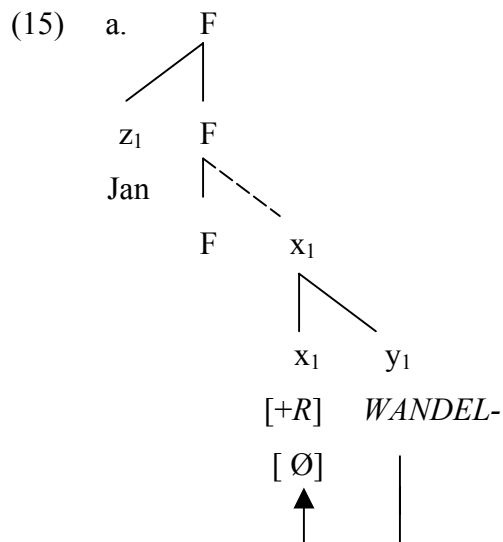
In the second part of the present work, I will be dealing extensively with the relational syntax and semantics of those constructions involving a *conflation* process of two different argument structures. In particular, in chapter 3 we will see how a subordinate unergative argument structure like that corresponding to *wiggle* or *dance* is conflated into a main unaccusative argument structure like that involved in (13).

For the purposes of the auxiliary selection problem, here I will limit myself to pointing out that the so-called 'unaccusativization' of unergative verbs (e.g., cf. (12c)) is nicely captured by Hoekstra's (1988) *Small Clause* analysis: in (14b) the unergative verb *wandelen* ('to walk') is said to be unaccusativized when it subcategorizes for a SC complement, *Jan* being taken as the inner subject of the prepositional SC predicate (i.e., *naar Groningen*). Hence the unaccusative behavior of the verb in (14b) is predicted: e.g., *zijn* (BE) is selected in this case. By contrast, in (14a,c) *Jan* acts as the true external argument of an unergative verb, *hebben* being then selected.

- (14) a. Jan... [v wandelen] (hebben (HAVE) selected)
 b. [v wandelen [sc Jan naar Groningen] (zijn (BE) selected)
 c. Jan...[v wandelen][adjunctPP naar Groningen] (hebben (HAVE) selected)

Accordingly, Hoekstra's analysis of (14a) and (14b) can be translated into the present argument structures in (15a) and (15b), respectively.¹⁰¹ Following Hoekstra (1984, 1999), here I will assume that the activity component associated to (14b) is not syntactically "active", the agent role being not assigned in the syntax. To put it in my present terms, I will assume that the [+R] semantic feature lexically assigned to the unergative verb *wandelen* is not active in the unaccusative argument structure in (15b), the more relevant eventive semantic feature being [+T], not [+R]. In chapter 3 below I will put forward syntactic and semantic arguments in favor of this (advanced) conclusion.

¹⁰¹ In chapter 3 I will show that the argument structure in (15b) is in fact more complex than that envisioned by Hoekstra. However, for the time being, I will assume that Hoekstra's SC analysis is sufficient for us to explain the auxiliary selection facts: (15b) is an unaccusative argument structure, *zijn* (BE) being then selected.



So far we have been dealing with the auxiliary selection facts concerning intransitive verbs, since transitive verbs are always assumed to select HAVE in those languages where a choice must be made between the auxiliaries HAVE and BE in the perfect verb form (e.g., Italian: *avere/essere*; Dutch: *hebben/zijn*; German: *haben/sein*). However, such an assumption has been empirically challenged by Lieber & Baayen's (1997) analysis of auxiliary selection in Dutch, among others. According to them, the existence of (exceptional) transitive verbs selecting BE (e.g., cf. (16)) puts syntactic accounts of auxiliary selection into question, since unaccusativity is apparently not involved in these cases.

- (16) a. De vijan is de stad genaderd. (Dutch)
the enemy IS the city approached

- b. De politie is de dief tot zijn huis gevolgd.
the police IS the thief to his house followed
- c. De kerk is Jezus niet gevolgd.
the church IS Jesus not followed

Lieber & Baayen (1997: 810; ex. (20)-(21a-b))

According to Lieber & Baayen, data such as those in (16) are problematic for syntactic accounts, but not for semantic ones. In particular, they assume *zijn* (BE)-selection is determined by the following semantic principle, relevant at the level of Lexical Conceptual Structure in the sense of Jackendoff (1990): if the highest function in an LCS has the semantic feature [+IEPS] (i.e., 'inferable eventual position or state'), *zijn* is selected. Crucially, they assume that this feature can also be assigned to the semantic functions of transitive verbs like *volgen* ('to follow') or *naderen* ('to approach'): e.g., they point out that "(21a) <my (16b): JM> is quite straightforward. Since the verb *volgen* 'follow' allows us to infer the eventual position of the police -nearer to the thief and his house- the uppermost semantic function is [+IEPS], and the auxiliary is *zijn*" (p. 810).

However, Hoekstra (1999) shows that Lieber & Baayen (1997) missed the point concerning their analysis of those "few verbs that are apparently transitive, but nevertheless take *zijn*" (p. 75). In particular, Hoekstra argues that examples such as those in (16) should be provided with an unaccusative analysis, since not only can those apparently "transitive" verbs involve BE-selection but they pass another unaccusative diagnostic as well, i.e., the use of the participle in prenominal position, as shown in (17).¹⁰²

- (17) a. deze mij zojuist gepasseerde auto (Dutch)
this me just passed car

¹⁰² As expected, *only* unaccusative verbs pass this test, whereas unergative or transitive verbs do not (e.g., cf. Hoekstra (1984, 1999)):

- (i) de helaas te jong gestorven geleerde (unaccusative) (Dutch)
the unfortunately too young died scientist
- (ii) *de vaak heel hard gelachen ouders (unergative)
the often very loudly laughed parents
- (iii) *deze vroeger veel boeken gelezen man (transitive)
this previously many books read man

Hoekstra (1999: 75; exs. (7))

- b. deze mij tot aan de deur gevolgdde politieman
 this me until the door followed policeman
- c. een onfortuinlijkerwijs zijn tekst vergeten acteur
 an unfortunately his text forgotten actor

Hoekstra (1999: 76; ex. (9))

Given this, notice that it appears to be natural to assign a SC analysis to unaccusative constructions like those in (16). Hoekstra (1999) did not provide a formal account of these data, but den Dikken (p.c.) pointed out to me that a natural (simplified) syntactic analysis of a sentence like the one in (16b) would be (18), where the apparently transitive verb *volgen* 'follow' is to be regarded as the result of incorporating an abstract central coincidence preposition like *AFTER* into an abstract transition verb like *GO*.¹⁰³

(18) de politie_i GO [_{SC} t_i AFTER de dief] [_{adjunctPP} tot zijn huis]

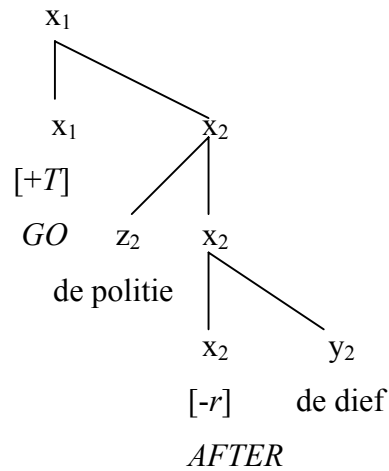
Accordingly, (19) can be regarded as a rough 'translation' of the SC analysis in (18), the adjunct PP *tot zijn huis* being external to the unaccusative argument structure.

¹⁰³ In fact, things are more complex here. According to den Dikken, the Dutch equivalent of the English sentence *The police followed the thief to his house* can be provided with three possible syntactic analyses: the one in (18) when *zijn* (BE) is selected, and those in (i-ii) when *hebben* (HAVE) is selected:

- (i) de politie volgen de dief [_{adjunctPP} tot zijn huis] (*hebben*/HAVE selected)
 (ii) de politie volgen [_{SC} de dief tot zijn huis] (*hebben*/HAVE selected)

According to den Dikken (p.c.), "with these three structures in place we can cover the entire spectrum of 'follow' facts". I will not discuss these complex issues here, since these facts are better to be discussed within the context of the so-called *Direct Object Restriction* on resultative(-like) constructions: see chapter 4 below for a more complete account of the so-called 'follow-facts'.

(19)



This said, next I would like to stress the fact that showing that the data in (16) can be provided with an unaccusative syntactic analysis does not mean that Lieber & Baayen's semantic principle of auxiliary selection has been refuted.¹⁰⁴ As shown above, it is clear that such a semantic principle applies to (16). Hopefully, in the vast majority of cases, their [+IEPS] feature could be reduced to my [$\pm T$] feature, which is *only* to be assigned to unaccusative eventive heads in virtue of my homomorphic conception of the syntax and semantics of argument structure relations. Accordingly, it should be clear that showing that those structures in (16) are unaccusative should not prevent one from taking into account that there *are* semantic factors/principles that can be argued to determine auxiliary selection.¹⁰⁵ to be sure, after all (i) a

¹⁰⁴ But see Hoekstra (1999: 70-71) for arguments against the empirical validity of the [+IEPS] feature in determining *zijn*-selection: "Clearly, the eventual position of the subject can be inferred in all these cases <(i-ii): JM>: (...) in (1b) <i: JM>, it is at the rabbit, in (1c) <ii: JM> it is at the top of the Mt. Everest and so on. Yet, these verbs combine with *hebben*. Therefore, these verbs should be [+IEPS], and are therefore predicted to select *zijn*, but they do not" (p. 71).

- (i) de poema heeft het konijn besprongen (Dutch)
the mountain-lion HAS the rabbit BE-jumped
- (ii) de avonturiers hebben de Mt. Everest beklommen
the adventurers HAVE the Mt. Everest BE-climbed

Hoekstra (1999: 71; exs. (1b-c))

I don't know which solution/reply would be worked out here by Lieber & Baayen (but see their relevant remarks on similar data in their 2.3 section "Type coercion and the Feature [IEPS]" (p. 821-823)). Be this as it may, it is clear that I can only vouch for myself: given my homomorphic conception of the syntax and semantics of argument structure relations, it is clear that two different semantic analyses are to be assigned to sentences like the following ones in (iii-iv). To advance the facts to be presented in chapter 5 below (see also Mateu (2000a)), [+T] and [+R] are the syntactically relevant eventive features involved in (iii) and (iv), respectively.

- (iii) Joe climbed to the top of the mountain. (unaccusative)
(iv) Joe climbed the mountain. (transitive)

¹⁰⁵ In fact, Hoekstra (1999: 70) himself seems to recognize this point: "It might therefore be the case that the syntactic notion of unaccusativity is what is relevant to auxiliary selection as well as other properties, *while the feature [+IEPS] is a determinant of unaccusativity* (emphasis added: JM)".

Needless to say, it is my claim that my feature [$\pm T$] is intended to be more appropriate than Lieber & Baayen's (1997) feature [+IEPS]: e.g., see the previous footnote. Accordingly, my

semantic explanation should account for the crosslinguistic fact that intransitive verbs selecting HAVE are (proto)typically more agentive than intransitive verbs selecting BE; (ii) a semantic explanation should account for the crosslinguistic fact that unergative verbs are (proto)typically atelic when compared to unaccusative verbs, whose class typically contains a huge number of telic verbs.¹⁰⁶

This said, notice that the relevant generalization to be drawn from the present discussion is that all those eventive heads that are assigned the [\pm T] feature select BE (i.e., *essere, zijn, sein,...*). In my homomorphic conception of the syntax-semantics interface, this assignment coincides with the syntactic fact that their corresponding verbal heads are all unaccusative. By contrast, all those eventive heads that are assigned the [\pm R] feature select HAVE (i.e., *avere, hebben, haben, ...*). In my homomorphic conception of the syntax-semantics interface, this assignment coincides with the syntactic fact that their corresponding verbal heads are all unergative or transitive.

This notwithstanding, as pointed out by Sorace (2000: 861), there is an issue that poses a potential problem for *pure* semantic accounts of auxiliary selection: constructions and/or verbs that are marked with a reflexive clitic select BE in Italian and French, regardless of their semantic characterization.¹⁰⁷ By contrast, HAVE is selected in their German or Dutch counterparts. For example, consider the following data from Italian and German:

- (20) a. Questa macchina si è venduta bene. (Italian)
 this car REF IS sold well
 b. Dieser Wagen hat sich gut verkauft. (German)
 this car HAS REF well sold
 'This car has sold well'.

homomorphic conception of the syntax and semantics of argument structure should be clearly reinforced.

¹⁰⁶ Basically, see van Valin (1990) for the relevance of *agentivity* and *telicity* in the split intransitivity phenomenon.

¹⁰⁷ But see van Valin (1990) and Centineo (1996) for two semantic accounts of why *essere* (BE) is selected in Italian reflexive constructions. However, it is not clear to me how their semantic account would explain the crosslinguistic contrasts in (20a-d). For reasons of space, I will not review their R<ole>R<eference>G<rammar>-based approaches here.

- c. In questo paese si è vissuto bene.
in this country REF IS lived well
- d. In diesem Land *hat* es sich gut gelebt.
in this country HAS one REF well lived
'In this country one lived well'.

Haider & Rindler-Schjerve (1987: 1042, ex. (1))

- e. Giovanni *ha* lavato se stesso.
Giovanni HAS washed REF
- f. Giovanni *si* è lavato.
Giovanni REF IS washed

Haider & Rindler-Schjerve (1987:1034; ex. (20))

Given the relevant contrasts in (20), notice that it seems clear that auxiliary selection must be considered as a morphosyntactic phenomenon, at least in Italian.¹⁰⁸ In German there is -as in the other *sich* contexts- no change of the auxiliary. As pointed out by Haider & Rindler-Schjerve (1987), the explanation of the contrasts in (20) is basically due to the morphosyntactic fact that Italian is a cliticizing language, while German is not.¹⁰⁹

Accordingly, the dependence of auxiliary selection on morphosyntactic facts could be said to be problematic for pure semantic accounts but not for "mixed" accounts like the present one, which assumes that both semantic and (morpho)syntactic factors can be argued to be involved in the complex phenomenon of auxiliary selection. Following Sorace (2000: 861), here I will not deal with reflexivized constructions like those exemplified in (20) since they involve an additional morphosyntactic factor related to the so-called 'cliticization parameter' (cf. Haider & Rindler-Schjerve (1987)).

¹⁰⁸ See Kayne (1993) for a purely syntactic explanation of the auxiliary selection problem in Romance (dialects), where he shows that factors such as the person/tense properties appear also to be relevant.

¹⁰⁹ See Bouchard (1984) or Grimshaw (1990), among others, for the claim that the reflexive clitic "absorbs" the external argument. Under this analysis, reflexive verbs are unaccusative. But see Reinhart & Sioni (1999) for arguments against this proposal. See also Alsina (1996) for an LFG account of reflexivized constructions in Romance. Concerning constructions with arbitrary reflexive clitic, see Mendikoetxea (1992) for a GB approach.

In the following sections 2.2.1 and 2.2.2, I will review Zaenen's (1993) and Sorace's (2000) approaches to the aux-selection problem. As noted above, I have chosen these two approaches in order to show the importance of drawing the crucial distinction in (2), i.e, the one between non-syntactically transparent conceptual content and syntactically transparent semantic construal. In particular, I will take pains to show the unrestrictedness of those two accounts due to (i) their relying too heavily on notions from the conceptual content dimension and (ii) their neglecting the importance of *syntactically transparent* semantic construal. For reasons of space, the following reviews will be quite sketchy, being oriented to showing the relevance of the crucial distinction in (2) to the aux-selection problem.

2.2.1. *Aux-selection and semantic proto-roles*

Zaenen (1993) tries to explain the auxiliary selection in Dutch by combining ideas from two different approaches to argument selection: Dowty's (1991) theory of proto-roles and Bresnan & Kanerva's (1989) LFG approach.

Quite importantly, Zaenen proposes that the difference drawn by Dowty (1991) between 'Proto-Agent' and 'Proto-Patient' properties is relevant to explain auxiliary selection:

- (21) Contributing properties for the Agent Proto-Role:
 - a. volitional involvement in the event or state
 - b. sentience (and/or perception)
 - c. causing an event or change of state in another participant
 - d. movement (relative to the position of another participant)
 - (e. exists independently of the event named by the verb)

- (22) Contributing properties for the Patient Proto-Role:
 - a. undergoes change of state
 - b. incremental theme
 - c. causally affected by another participant
 - d. stationary relative to movement of another participant
 - (e. does not exist independently of the event, or not at all)

Dowty (1991: 572; ex. (27)-(28))

Zaenen uses Dowty's (1991) approach in order to find out the semantic determinants behind the notions *unaccusative* and *unergative*. However, she changes Dowty's more direct way of calculating syntactic 'roles' (i.e., subject and direct object)¹¹⁰ by assuming an intermediate level of argument classification, called 'intrinsic argument classification' in Bresnan & Kanerva's (1989) LFG-based work.

In particular, Zaenen states the following relevant generalizations about 1 participant verbs:¹¹¹

- (23) a. If a participant has more patient properties than agent properties, it is marked *-r*.
 b. If a participant has more agent properties than patient properties, it is marked *-o*.
 c. An unaccusative participant is a participant that is intrinsically marked *-r*.
 d. An unergative participant is a participant that is intrinsically marked *-o*.
- (24) When an intrinsically *-r* marked participant is realized as a subject, the auxiliary is *zijn* (BE).

As Zaenen observes, these principles seem to give the correct results in the majority of unergative and unaccusative verbs. She exemplifies her approach with two typical examples:

(25) example verb	properties of participants	intrinsic assignment
<i>telefoneren</i> :	agent: a, b	-o
'to phone'	patient: none	

¹¹⁰ See Dowty's (1991: 576) *Argument Selection Principle*: "In predicates with grammatical subject and object, the argument for which the predicate entails the greatest number of Proto-Agent properties will be lexicalized as the subject of the predicate; the argument having the greatest number of Proto-Patient entailments will be lexicalized as the direct object".

¹¹¹ '-o (not objective)' is close to the notion of external argument in GB or initial subject in RG; '-r (unrestricted)' is close to the notion of internal argument or initial object. As noted, Zaenen uses the LFG terminology because she intends her proposal to be technically compatible with this framework.

<i>sterven</i> :	agent: for some verbs: b	-r
‘to die’	patient: a, b, or c	

Zaenen (1993: 150; ex. (83))

According to (25), *telefoneren* will select *hebben* (HAVE), whereas *sterven* will select *zijn* (BE). However, as Zaenen herself acknowledges, such an account is not exempt of problems. Concerning problematic examples like those in (26), Zaenen makes the following remarks in (27):

(26)	example verb	properties of participants	intrinsic assignment
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<i>aankomen</i> :	agent: a	-r
‘to arrive’	patient: a or b	

<i>stinken</i>	agent: none	-o
‘to stink’	patient: none	

Zaenen (1993: 151; ex. (84))

(27) “Here we seem unfortunately to have to distinguish between those that have no patient or agent properties at all and those that have an equal number of both. We have argued that the participant role of verbs like *aankomen* (‘to arrive’) has the agent property volition, which we called controllability. It has also the patient property incremental theme as defined in Dowty, which corresponds to being a participant of a subset of what we have called telic predicates. No other characteristics seem to be relevant. We make the assumption that an equal number of properties leads to the assignment of -r. This again lead to the right auxiliary assignment. It also leads to problems with verbs like *stinken* (‘to stink’) and *bloeden* (‘to bleed’). These verbs select *hebben*. I see no elegant solution to this and can only stipulate that when the sole participant of a verb has neither agent nor patient properties it is marked -o”.

Zaenen (1993: 150)

In order to show how one can avoid Zaenen's totally *ad hoc* assumptions, it will be necessary to make a brief comparison of the different epistemological foundations between my internalist approach to semantics and the externalist one assumed by Dowty, on whose theory of '(proto-)theta-roles' Zaenen bases her account of auxiliary selection.¹¹²

In particular, the main difference between Dowty's (1991) approach and mine can be drawn from his following statement:

- (28) "Semantic distinctions like these entailments (<i.e., the Proto-Agent and Proto-Patient properties>) ultimately derive from distinctions in kinds of events found 'out there' in the real world: they are natural (physical) classifications of events, and/or those classifications that are significant to human life. There is no reason to believe that all such classes must have discrete boundaries (...) It is certainly not obvious that in ordinary reasoning and conversation people directly pay attention to or worry about whether something really was or was not a Theme or a Source or an Agent (in some sense of 'Theme', etc., exactly as defined by Jackendoff or some other linguist); but we do concern ourselves all the time, both in everyday life and in courts of law, and sometimes to a painstaking degree, with whether an act was really volitional or not, whether something really caused something or not, whether somebody was really aware of an event or state or not, or had a certain emotional reaction to it, whether something was moving or stationary, whether something changed in a certain way or not, whether an event was finished or not, and whether an act produced something as a result or not"

Dowty (1991: 575)

I think that Dowty's statement in (28) is excellent for one to exemplify Jackendoff's (1990: chap. 1) important difference between what he calls *E(-xternal) Semantics* and *I(-nternal) Semantics*.¹¹³ Here it should be clear that I am assuming

¹¹² For reasons of space, I will not make a detailed criticism of Dowty (1991). This notwithstanding, I hope that my criticism will be enough to show where our approaches crucially differ.

¹¹³ This distinction is, of course, reminiscent of Chomsky's (1986) dichotomy between *E(-xternal) language* vs. *I(-nternal) language*.

some important postulates of *I-Semantics*:¹¹⁴ semantic structures are to be regarded as mental construals that have nothing to do with “distinctions in kinds of events found ‘out there’ in the real world”. In other words, semantic structures are creations of our minds, of our mental world (a ‘real’ world, of course, since our mind is biologically encoded in our very real brain), and, therefore, they cannot be simply regarded as part of ‘the external world’.

Concerning so-called ‘theta-roles’, notice that these notions can be argued to be relevant to ‘our internal world’ precisely because these are drawn from I-semantic structures. Given this, let me clarify the following assertion from Dowty (1991: 575): “they (<i.e., the list of semantic entailments of (21) and (22)>: JM) are more straightforwardly relevant to human life”. As an I-Semanticist, I feel myself obliged to correct Dowty’s latter statement: “relevant to the external conception of human life”. Here is the crucial point where E-Semanticists and I-Semanticists diverge. While the former consider the “external” aspect of semantics as the (only) relevant one to their theory of Truth and Reference, the latter consider the “internal” aspect of semantics as the (only) relevant one to their (sub)theory of cognitive psychology, i.e., I-Semantics.

To be sure, Dowty is right when saying that “it is certainly not obvious that in ordinary reasoning and conversation people directly pay attention to or worry about whether something really was or was not a Theme or a Source or an Agent”. The relevant remark to be made here is that in I-Semantics, semantic structures are by and large inaccessible to our ‘consciousness’,¹¹⁵ since they are internal construals of our mind. Given this, I think that it is misleading to characterize the lexical semantics of theta-roles in terms of notions that, according to Dowty, are relevant “in everyday life and in courts of law” (*sic*).

To put it crudely, my main objection to Dowty’s theory is as follows: If theta-roles are to be regarded as clusters of concepts relevant to the external conception of

¹¹⁴ One important caveat is in order here: my assuming an *internalist* approach to semantics does not mean that I am adopting a Jackendovian approach. To be sure, being an I-semanticist should not be equated to being a Jackendovian semanticist: e.g., Langacker (1987a, 1991) and Lakoff (1987) can be regarded as two proponents of I-semantic approaches as well, but it is clear that their semantic theories are notably different from the one pursued by Jackendoff (1983, 1990).

See Abbott (1997) and Jackendoff (1998) for an interesting debate concerning the distinction between E-Semantics vs. I-Semantics.

¹¹⁵ For example, see Jackendoff (1987) or Lakoff & Johnson (1999) for two clear statements of this point.

human life, what are the (formal) constraints that limit the number of the semantic entailments of (21) and (22)? That is, why five (external) semantic entailments and not ten or twenty-five for each Proto-Role? Indeed, if the relevant *formal restrictions* concerning 'volition', 'sentience', etc. or 'change of state', 'incremental theme', etc. are not explained, his theory turns out to be hard to test and falsify.

This said, notice that the previous *excursus* should not be taken as vain at all, since it is precisely in this general context where Zaenen's problems concerning auxiliary selection become relevant. If we do not have a detailed or exhaustive list of the formal constraints which delimit the number and the formal characterization of the semantic entailments of (21) and (22), notice that it will be always possible to "invent" another (external) semantic entailment that avoids the problematic case. Thus, for example, although *stink* ('to stink') in (26) or *bloeden* ('to bleed') do not appear to have any Proto-Agent property of the list of (21), we might introduce another Proto-Agent property (e.g., "discharge of energy", to paraphrase one of Comrie's properties of agents) in order to explain why *hebben* (*HAVE*) is selected.

Note that it is absolutely crucial for Dowty's approach to work that precise limits be given to the relevant number of semantic entailments that will enter into the Argument Selection. However, Dowty (1991: 572) offers a "preliminary list of entailments (...) without implying that these lists are necessarily exhaustive or that they could not perhaps eventually be better partitioned in some other way". Despite Dowty's claim, notice that "exhaustiveness" should be taken as a fundamental property if we want to attribute an explanatory value to statements such as "X has more {a/p} properties than Y, so X is selected".¹¹⁶ What is more, "exhaustiveness" is crucial in order to avoid to fall into an open-ended list of properties, which would invalidate Dowty's approach completely.

In striking contrast to Dowty's approach, notice that in my present framework the number and the nature of (the syntactically relevant) 'theta-roles' are clearly (i.e., formally) delimited. (Syntactically relevant) 'theta-roles' are few since few are the specifier and complement positions of the argument structure relations, which

¹¹⁶ See Davis & Koenig (2000), Davis (2001), and Koenig & Davis (2001) for an HPSG-based approach that tries to solve some problems inherent to Dowty's (1991) 'numerical comparison model'. See also Ackerman & Moore's (2001) LFG-based approach for related discussion.

encode *only* three types: $[\pm R]$, $[\pm T]$, and $[\pm r]$ (cf. chapter 1). Notice then that there is no room for the “nondiscreteness” of theta-roles proposed by Dowty in our current conception of the syntax-semantics interface regarding argument structure configurations.^{117,118} Quite the opposite: the “discreteness” of those argument structures that I have posited in chapter 1 above is argued to be necessary if we want to connect the relational syntax and relational semantics in an explanatory way (i.e., in a uniform/homomorphic way, I argue).

Given this, let me explain how Zaenen’s problematic examples in (26) are to be analyzed in the present framework: *aankomen* (‘to arrive’) is an unaccusative verb because it involves the following *discrete* argument structure in (29); by contrast, *stinken* (‘to stink’) or *bloeden* (‘to bleed’) are unergative verbs because their *discrete* argument structure is the one depicted in (30).¹¹⁹

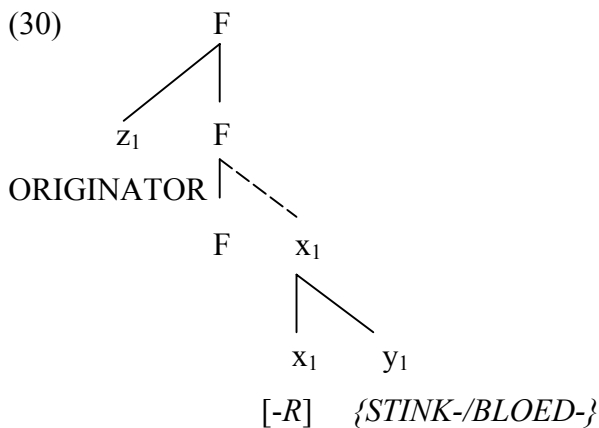
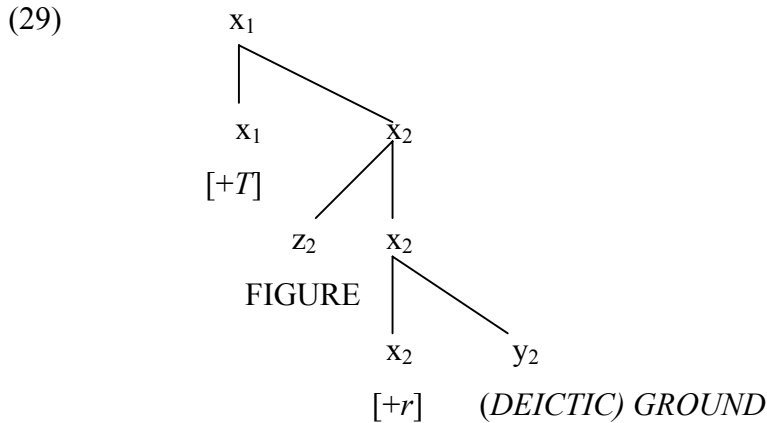
¹¹⁷ Of course, my adopting such a “discrete/digital” view of the syntax-semantics interface should not prevent me from recognizing that notions of conceptual content can be described in terms of *prototypicality* and/or *gradience*. In fact, in the following section I will show how these two notions, which are characteristic of what I call ‘non-syntactically transparent conceptual content’, can be said to interact with those more ‘discrete/digital’ notions involving ‘syntactically transparent semantic construal’ (cf. *infra*).

Moreover, I tend to agree with those who think that it should be very difficult for one to argue against the well-established fact that almost every word meaning has fuzzy boundaries: e.g., cf. Jackendoff’s (1983) account of so-called ‘preference rules’ or Lakoff’s (1987) account of semantic prototypicality based on Rosch’s (1978) pioneering work. But see Fodor (1998) for a very severe criticism of those theories based on *prototypes*. I will not review these complex issues here.

See also Jackendoff (1990: 284-285) for some interesting general conclusions regarding why ‘preference rules’, ‘graded conditions’ and ‘3D model stereotypes’ are not to be seen as (mainly) relevant at the syntax-semantics interface. He assumes that such an interface is to be established in terms “that are more or less discrete and digital”. With him I will adopt the non-trivial assumption that such a general consideration is the correct one, which could be incorrect in the end, to be sure (e.g., see Lakoff (1987) for a different view).

¹¹⁸ For two relevant ‘discrete’ approaches to the so-called ‘Theta-theory’, see Gràcia (1989b) and Reinhart (2000, 2001). For example, according to Reinhart (2001: 2), “two binary features $\pm c$ (*cause*<*d*> *change*) and $\pm m$ (*mental state*) define eight feature clusters which correspond to what has been labelled theta-roles”. For reasons of space, I will not review their approaches here.

¹¹⁹ For expository reasons, here I use caps to specify the labels of ‘theta-roles’. This notwithstanding, recall that the syntactically relevant ‘theta-roles’ are drawn from the mere argument structure configuration (cf. chapter 1). Moreover, note that incorporating stuff is depicted in italics.



Next I will review Sorace's (2000) approach to auxiliary selection, which can be said to be the most comprehensive semantic account up to the present. We will see that her semantic account allows one to make interesting predictions which are not accounted for by Zaenen's (1993) approach to aux-selection in Dutch. For example, it is quite surprising that the verb 'arrive' (cf. Dutch *aankomen*) is problematic for Zaenen (cf. (26) *supra*), since this verb shows a uniform (i.e., non-variable) behavior across languages concerning auxiliary selection: verbs like *arrive* **systematically** select BE in those languages showing aux-selection. We will see that Sorace accounts for this fact in quite a natural way. By contrast, the fact that verbs like *to stink* are problematic for semantic approaches (as it is for Zaenen's (cf. (26) *supra*)) should not be surprising since languages do show variation concerning these verbs. We will see that once again Sorace also accounts for this fact in a very interesting way.

As stressed above, my goal in reviewing Sorace's (2000) approach in the following section is to provide an explanatory account of her descriptive insights concerning aux-selection. In particular, we will see that one interesting theoretical

picture emerges from making use of the crucial distinction in (2) in the present review.

2.2.2. *Aux-selection and gradiency effects*

One of the most important descriptive insights to be found in Sorace (2000) is that Western European languages like Italian, French, Dutch or German are shown to vary, *but in an orderly way*, concerning aux-selection with intransitive verbs. In particular, Sorace points out that some intransitive verbs require a given auxiliary categorically, whereas others allow both auxiliaries to a greater or lesser extent depending on their position on the hierarchy of aspectual/thematic verb types in (31). The former are called "core verbs", while the latter "non-core verbs".

(31) The Auxiliary Selection Hierarchy (ASH)

CHANGE OF LOCATION	selects BE (least variation)
CHANGE OF STATE	
CONTINUATION OF A PRE-EXISTING STATE	
EXISTENCE OF STATE	
UNCONTROLLED PROCESS	
CONTROLLED PROCESS (MOTIONAL)	
CONTROLLED PROCESS (NONMOTIONAL)	selects HAVE (least variation)

Sorace (2000: 863; table 1)

Some of her main relevant contributions to the aux-selection problem are emphasized in the following quote in (32):

(32) "I assume that auxiliary selection, like many other kinds of syntactic behavior, is sensitive to both aspectual and thematic dimensions (Grimshaw 1990; Baker 1997). *Verbs that are maximally specified along one or the other dimension tend to be categorical in their choice of auxiliary* <emphasis added: JM>: the two key notions are telic change, which strongly correlates with BE, and agentive unaffecting process, which strongly correlates with HAVE. *Verbs that are underspecified with respect to one or both dimensions exhibit variation* <emphasis added: JM>.

Sorace (2000: 861-862)

To be sure, Sorace is not the first linguist to show that semantic components like 'telicity' or 'agentivity' are relevant to aux-selection with intransitive verbs (e.g., cf. van Valin (1990), among others). Rather the main contribution of her semantic approach is that it allows one to make some non-trivial predictions concerning variability in aux-selection with intransitive verbs. For example, consider the following Italian data adapted from Sorace (2000), which can be taken to exemplify the so-called 'gradiency effect' on aux-selection:¹²⁰

- (33) a. Maria è arrivata/ *ha arrivato. (Italian)
 Maria IS arrived/HAS arrived
- b. Gianni è morto/*ha morto.
 Gianni IS died/ HAS died
- c. La temperatura è salita/?ha salito improvvisamente.
 the temperature IS risen/HAS risen suddenly

¹²⁰ One important caveat is in order here: the list of examples in (33) should not be taken as a merely impressionistic one. The reader can consult Sorace's (2000) typological work in order to check the degree of orderly variation exhibited by intransitive verbs both intra- and interlinguistically.

On the other hand, as noted above, Sorace (2000: 861) explicitly puts reflexive verbs like those in (i) aside.

(i) *accumularsi* 'accumulate', *dividersi* 'divide', *riempirsi* 'fill', etc. (Italian)

She points out that there is an additional morphosyntactic condition that appears to be relevant to aux-selection in Italian and French (where BE is selected), but not in Dutch or German (where HAVE is selected): cf. the so-called 'cliticization parameter' discussed in Haider & Schjerve (1987). See also Mendikoetxea (2000: 143-144; fn. 26) for some relevant remarks: according to her, the Dutch reflexive *zich* in *De suiker heeft zich opgelost* 'the sugar HAS REF melted' is an element that is bound to the internal argument position, while its Spanish counterpart *se* in *El azúcar se disolvió* 'the sugar REF melted' is a clitic that is associated to the functional head introducing the external argument. As noted by Mendikoetxea, such an association can also be argued to hold for the Italian reflexive clitic *si*. Accordingly, the explanation of *essere* selection in Italian reflexive constructions is crucially related to the 'association' of the clitic *si* to the functional head that introduces the external argument, i.e., *v* (cf. Mendikoetxea (2000) for the formal details).

I assume Mendikoetxea's (2000) dyadic analysis of the reflexive verbs in (i): a PRO element is argued to occupy the position associated to the Originator (i.e., the spec of the functional projection introducing the external argument), which is in turn controlled by the Figure argument, which has moved to spec of Tense (cf. (57m) in section 1.4 above). See her paper for theoretical and empirical motivation of this analysis. Following Levin & Rappaport Hovav (1995: chap. 3), I will also assume that reflexive verbs like those in (i) can be descriptively characterized as 'externally caused verbs of change of state'. Accordingly, the relevant combination of semantic features will involve the [[+R] [+r]] set (see Chierchia (1989), Levin & Rappaport Hovav (1995) and Mendikoetxea (2000) for arguments in favor of positing a causer in the reflexive variant). As noted above, the fact that HAVE is not selected by those reflexive verbs in (i) is related to the additional morphosyntactic association of the clitic *si* to the head introducing the external argument. In contrast, as noted by Sorace (2000: 861), "in German and Dutch reflexive verbs select HAVE, possibly as a consequence of the fact that these languages do not have cliticization (Haider & Rindler-Schjerve (1987))". Indeed, other things being equal, the [[+R] [+r]] set involves HAVE-selection.

- d. I miei nonni sono/?hanno sopravvissuto al terremoto.
my grandparents ARE/HAVE survived to the earthquake
- e. I dinosauri sono esistiti/??hanno esistito 65 milioni di anni fa.
the dinosaurs ARE existed/HAVE existed 65 millions of years ago
- f. La campana ha rintoccato/?è rintoccata.
the bell HAS tolled/IS tolled
- g. La luna ha brillato/ ??è brillata.
the moon HAS shone/IS shone
- h. L'aereo ?ha/è atterrato sulla pista di emergenza.
the plane HAS/IS landed on the runway of emergency
- h'. Il pilota ha/?è atterrato sulla pista di emergenza.
the pilot HAS/IS landed on the runway of emergency
- i. I poliziotti hanno lavorato (fino all'alba)
the policeman HAVE worked (until the dawn)

Notice that there is a gradiency effect involved in those intransitive verbs exemplified in (33)¹²¹: core verbs like *arrivare* and *laborare* select *essere* (BE) and *avere* (HAVE), respectively, in a more consistent way than non-core verbs like *esistere* or *rintoccare*. Quite interestingly, Sorace shows that the same effect holds both intra- and interlinguistically.¹²²

Sorace claims that the crosslinguistic variation involved in those languages sensitive to aux-selection depends on the location of the cut-off point along the hierarchy in (31). She points out that "any change in the location of the cut-off point affects the verbs in the middle of the hierarchy, but -crucially- not the core" (p. 887).

Following Sorace's insight, we can now exemplify this kind of crosslinguistic variation regarding aux-selection with the difference between Italian and French: as

¹²¹ Cf. *arrivare* 'to arrive' (telic change of location verb); *morire* 'to die' (telic change of state verb); *salire* 'to rise' (indefinite/atelic change verb); *sopravvivere* 'to survive' (continuation of condition verb); *esistere* 'to exist' (existence of state verb); *rintoccare* 'to toll'/*brillare* 'to shine' (uncontrolled process verbs); *atterrare* 'to land' ({un}controlled motional process verb); *lavorare* 'to work' (controlled non-motional process verb).

¹²² For example, concerning existence of state verbs, Sorace (2000: 869) points out that "stative verbs have a preference for *essere* (...), but native intuitions are considerably weaker on these verbs (...) In French, verbs of existence consistently select auxiliary *avoir*. In German, the majority select *haben* but some exhibit variation".

On the other hand, concerning uncontrolled process verbs, Sorace (2000: 877) points out that "while these verbs <verbs of emission: JM> normally select HAVE in French, Dutch and German, their behavior is variable in Italian".

can be inferred from the data in (33), the relevant cut-off point in Italian can be argued to be drawn between change of location-existence of state verbs, on the one hand, and controlled nonmotional process-uncontrolled process verbs, on the other (cf. (34)). The fact that aux-selection in Italian is a reliable diagnostic when distinguishing intransitive verbs can be argued to be related to the fact that the relevant *prototypical* (macro)distinction is the one between change/state verbs and process verbs.

(34) The Auxiliary Selection Hierarchy (ASH) in Italian

- | | |
|--------------------------------------|---|
| CHANGE OF LOCATION | selects <i>essere</i> (least variation) |
| CHANGE OF STATE | |
| CONTINUATION OF A PRE-EXISTING STATE | |
| EXISTENCE OF STATE | |
| ----- | "cut-off point" |
| UNCONTROLLED PROCESS | |
| CONTROLLED PROCESS (MOTIONAL) | |
| CONTROLLED PROCESS (NONMOTIONAL) | selects <i>avere</i> (least variation) |

By contrast, as can be inferred from the French data in (35) adapted from Sorace (2000), the relevant cut-off point in this language can be argued to be drawn between *telic* change of location/change of state verbs and the rest: cf. (36).¹²³ Accordingly, as pointed out by Sorace (2000: 872; *passim*), "explicit telicity is the main determinant of *être*-selection in French".

- (35) a. Marie est arrivée/*a arrivé en retard. (French)
 Marie IS arrived/HAS arrived late
- b. Ma fille est née/*a né a cinq heures du matin.
 my daughter IS born/HAS born at five hours of morning
- c. Les enfants ont grandi/*sont grandis depuis l'an dernier.
 the children HAVE grown/*ARE grown since the year last

¹²³ Cf. *arriver* 'to arrive' (telic change of location verb); *naître* 'to be born' (telic change of state verb); *grandir* 'to grow' (indefinite change verb); *survivre* 'to survive' (continuation of condition verb); *exister* 'to exist' (existence of state verb); *pleuvoir* 'to rain' (uncontrolled process verb); *courir* 'to run' ({un}controlled motional process verb); *travailler* 'to work' (controlled non-motional process verb).

As noted above, I think that the main predictions of Sorace's approach to aux-selection are borne out. However, as Dowty (1991), she makes no attempt to formalize her semantic account. Next it is my intention to show that her approach can be formalized in quite an elegant and simple way within the present framework.

Unsurprisingly, my main criticism against Sorace's descriptive work is similar to that I leveled against Dowty's work on proto-roles in the previous section. To put it crudely once again, my main objection to Sorace's account is as follows: if the relevant lexical semantic classes of verbs are defined on the basis of conceptual content notions like those in (31), what are the (formal) constraints that limit their number in order for the hierarchy to preserve its descriptive value? That is, one would like to know which is/are the *formal* criterion(s) that lead her to posit seven (but not ten or sixteen) lexical semantic classes of verbs when dealing with the aux-selection problem.¹²⁶

In fact, Sorace seems to be aware of this problem but provides no solution to it. In particular, she makes the following concise remark:

- (37) "A referee objects that auxiliary selection in French, Dutch and German does not show gradience, since there are no clear differences between continuation-of-condition verbs and existence-of-state verbs. The gradient analysis, however, does not predict that all languages distinguish among all classes on the hierarchy. It is possible for languages to combine classes, *or perhaps to make finer differentiations within classes* <emphasis added: JM>. The central prediction of gradient analysis is that there will be more variation among intermediate verbs, and this is indeed shown by the data".

Sorace (2000: 870-871; fn. 17)

speaker": e.g. cf. his (8b) example *Entre l'aurore et midi, la température a monté/??est montée* 'Between dawn and noon, the temperature rose'.

¹²⁶ See also Rosen (1996) for a severe criticism of Pinker's (1989) and Levin's (1993) classification of verbs on the basis of *descriptive* constructs like "lexical semantic classes of verbs".

(i) "Because the verb-class approach neither describes the syntactic facts adequately nor solves the learning problem, I conclude that verb classes do not exist as a cognitive or linguistic organizing mechanism but are instead an epiphenomenon of descriptive work on lexical semantics, argument structure, and verbal alternations. Verb classes are inventions of linguists that describe (in some cases incorrectly) the behavior of verbs. Because work on verb semantics provides us with a descriptive tool that helps us understand the mechanisms that govern verbal behavior, the work on verb classes has been invaluable. However, *verb classes have no explanatory power, and therefore they do not help us understand the computational system* <(emphasis added: JM)>". Rosen (1996: 193-194)

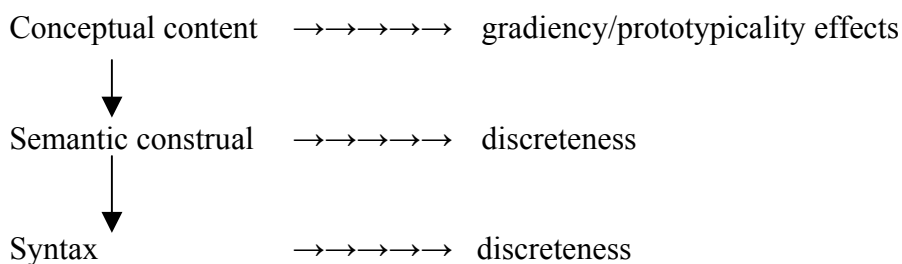
Unfortunately, such a remark confirms our negative expectations concerning the explanatory merits of Sorace's approach, as it stands. In fact, notice that it is not clear what prevents the lack of relevant restrictions in her approach. Indeed, our relevant qualification to (37) should be immediate: what dictates the relevant limits to what Sorace refers to as "finer differentiations"? How far is one allowed to go in his/her "finer and finer differentiations"?

At this non-trivial point of discussion I would like to emphasize the importance of drawing the distinction in (2), the one between non-syntactically transparent conceptual content and syntactically transparent semantic construal. As shown above when dealing with Dowty's approach to *proto*-roles and now with Sorace's *gradiency* approach to aux-selection, it is not clear *how far* one can go into his/her making "finer distinctions" concerning the prototypicality and gradiency effects in grammar.¹²⁷

As noted above, unlike Fodor (1998), I do not want to deny the insights from works dealing with non-discrete phenomena. Let us assume that they are cognitively real, despite Fodor's claims to the contrary. So a non-trivial tension emerges from the following: on the one hand, it is assumed that those prototypicality/gradiency effects do exist. On the other, it is clear that no explanatory limits are provided in order for the syntax-semantics interface/mapping to be established in a more or less restricted way.

At the risk of simplifying matters somewhat, let us try to show how the introduction of the distinction in (2) into the picture of the semantics-syntax interface (cf. (38)) could allow one to diminish the tension alluded to above. Given (2), let us start by noting that the relevant state of affairs could be depicted as follows:

(38) *The semantics-syntax interface*



¹²⁷ See Newmeyer (1998) for general discussion on similar issues concerning formal {and/vs.} functionalist views of grammar.

See also Fodor (1998) for similar criticisms leveled from a very different perspective than the one adopted here.

As pointed out above, the study of the semantic determinants involved in the binarily-featured aux-selection allows us to test the theoretical and empirical advantages of adopting the distinction in (2).

Assuming (38), our first step would consist of trying to work out which *discrete* semantic determinants can be argued to be syntactically transparent and which *non-discrete* ones cannot. Given (38), it seems then more plausible that we begin by drawing the much more limited syntactically transparent notions of semantic construal. Accordingly, the possible combinations of semantic features that one is allowed to draw from those meaningful relations involved in the argument structures of unaccusatives and unergatives are formally reduced/limited to the following ones in (39).¹²⁸

- (39) a. [[+T] [+r]]
 b. [[+T] [-r]]
 c. [[-T] [-r]]
 d. [-R]
 e. [+R]

The formally defined combination of semantic features in (39) allows one to make some interesting predictions concerning the *discrete* semantic determinants involved in aux-selection with intransitive verbs. In the present framework, core unaccusative and unergative verbs are defined as involving the *positively specified* semantic features: [[+T] [+r]] and [+R], respectively. The former combination is argued to hold for *telic* change of location verbs like It. *arrivare* 'to arrive' or *telic* change of state verbs like It. *nascere* 'to be born'. By contrast, the latter feature is

¹²⁸ Notice that the [[-T] [+r]] combination turns out to be empirically excluded in virtue of the fact that telic (cf. my [+r]) unaccusative verbs can always be argued to involve a positive transition (cf. my [+T]). By contrast, as noted below, [[+T] [-r]] appears to be an idoneous combination in order for us to deal with Levin & Rappaport Hovav's (1995: 172) 'atelic verbs of change of state' like *widen* or *cool* (cf. Dowty's (1979) 'degree achievements') and 'atelic verbs of inherently direction motion' like *descend* or *rise*. Similarly, Sorace (2000: 864) points out that indefinite change verbs include "verbs of directed motion (*rise, descend*) and internally caused verbs of change of state (*become, wilt, bloom, decay*), which express a change in a particular direction without specifying a telic endpoint <emphasis added: JM> (...) (if something cools, it goes through a series of progressively cooler states, even though it may not become cold)". But see my qualms below concerning so-called "internally caused verbs of change of state".

argued to hold for internally caused verbs involving a volitional controller like It. *lavorare* 'to work'.

By contrast, non-core verbs are represented by the remaining combinations of semantic features that at least contain one *negatively specified* value. Concerning non-core unaccusative verbs, notice that it is precisely the formal restrictions of the present approach that lead me to point out that there are no clear differences between so-called 'continuation of condition verbs' and 'existence of state verbs'. As noted by Sorace's (2000) referee in (37) above, there appear to be no differences between these lexical semantic classes as far as gradience effects are concerned: not only can the reviewer's assertion in (37) be argued to hold for French, Dutch and German, but can be argued to do so for Italian as well.¹²⁹ Accordingly, I want to suggest that the formal characterization of the relevant semantic classes of verbs is the following one: telic change of location/change of state verbs are to be characterized as $[[+T] [+r]]$, indefinite/atelic change verbs are associated to the $[[+T] [-r]]$ combination, and *both* continuation of condition verbs and existence of state verbs are formally identified with the $[[-T] [-r]]$ combination.

On the other hand, non-core unergative verbs are to be regarded as involving the formal semantic feature $[-R]$, which is meant to be associated to all those unergative verbs which cannot be said to involve a volitional controller (e.g., cf. Levin & Rappaport Hovav (1995) for relevant discussion on non-agentive verbs of sound emission like *toll/rintoccare* (cf. (33f)) or non-agentive verbs of substance emission like *shine/brillare* (cf. (33g))).

Quite interestingly, let us then see how Sorace's (2000) triple distinction involved in the ASH in (31) (i.e., 'categorical'/'more variable'/'least determinate' aux-selection) can be accounted for in the present framework.¹³⁰

Applying the distinction in (2) to the ASH in (31), one could argue that *categorical* selection involves both a non-fuzzy conceptual representation *and* a completely positive specification of those features expressing semantic construal.

¹²⁹ In fact, notice that if such a difference did exist in Italian, the grammaticality judgements given in (33d-e) would have been the inverse ones, i.e., the '???' judgements being exchanged.

¹³⁰ For example, Sorace's (2000: 878) following quote can be taken as representative of such a view: "auxiliary HAVE is most *categorically* selected by verbs of <controlled> nonmotional process, *more variable* with verbs of motional activity, and *least determinate* with verbs denoting uncontrolled process" <emphasis added: JM>.

That is, the conceptual counterparts corresponding to the semantic combinations $[[+T] [+r]]$ and $[+R]$ could be argued to be seen as *maximally distinct* as well.

By contrast, *least determinate* selection involves both a probably fuzzy conceptual representation (in the sense that the boundaries of the relevant category are not clear) *and* a totally negative specification of those features expressing semantic construal. That is, the conceptual counterparts corresponding to the semantic combinations $[[-T] [-r]]$ and $[-R]$ could be argued to be seen as *minimally distinct* as well.¹³¹

Finally, before dealing with so-called *more variable* selection, some previous remarks are in order. It is the case that one can also show the *indirect* relevance of conceptual content to aux-selection when s/he is dealing with 'intermediate' cases like those involved in (33h-h'), repeated below in (40).

- (40) a. L'aereo ?ha/è atterrato sulla pista di emergenza. (Italian)
 the plane HAS/IS landed on the runaway of emergency
- b'. Il pilota ha/?è atterrato sulla pista di emergenza.
 the pilot HAS/IS landed on the runaway of emergency

Notice that it is not *sufficient* to explain the examples in (40) by merely resorting to our human ability to construe a similar conceptual scene in more than a (syntactically relevant) semantic way (e.g., cf. *MADE A LANDING* (HAVE selected) vs. *GO TO LAND* (BE selected)). To be sure, one could ask why the same cannot be applied to telic change of location verbs like *arrivare* in (41) (e.g., cf. *#MADE AN ARRIVAL* (HAVE selected) vs. *GO TO DEICTIC GROUND* (BE selected)). I surmise that there is a conceptual content-based reason that allows us to extract a created object (say, *LANDING*) from *atterrare* (so it can be interpreted as the

¹³¹ For example, Sorace's (2000: 878) data in (i), where both auxiliaries are said to be possible, could be explained as follows. Non-controlled process verbs like *risuonare* 'to resound' and *piovare* 'to rain', which typically express a thin flow of discharge of energy (hence their $[-R]$ feature), could be semantically construed as atelic stative verbs as well, the combination $[[-T] [-r]]$ being then the coerced one when *essere* is selected. However, notice that our recognizing that the semantic combinations $[-R]$ and $[[-T] [-r]]$ are also minimally distinct with respect to their conceptual semantics (fuzziness being then involved) is fully compatible with our positing that in (i) *avere*-selection is sensitive to $[-R]$, while *essere*-selection is sensitive to $[[-T] [-r]]$.

- (i) a. L'eco ha/è risuonato nella caverna.
 the echo HAS/IS resounded in the cave
- b. Ieri ha/è piovuto tutto il giorno.
 yesterday HAS/IS rained all the day

complement of a *DO* relation (i.e., my [+R]); however, we cannot do the same with the otherwise prototypical telic change of location verb *arrivare*. Such a reasoning would account for the well-known fact that verbs like *arrive* or *come* can never act as unergatives, selecting then BE categorically.

- (41) a. L'aereo è/*ha arrivato.
 the plane IS/HAS arrived
 b. Il pilota è/*ha arrivato.
 the pilot IS/HAS arrived

With the previous remarks in mind, let us now see why the data in (40) cannot be argued to motivate gradiency effects in aux-selection like those that can be involved when dealing with the (minimally distinct) combinations $[-T] [-r]$ and $[-R]$. Clearly, in (40) we are not dealing with gradiency because its effects cannot be said to be attributed to constructions involving maximally specified semantic features: notice that the maximally distinct combinations of features [+R] and $[[+T] [+r]]$ are involved in *Il pilota ha atterrato sulla pista* and *?Il pilota è atterrato sulla pista*, respectively. Indeed, these contrasts are to be better regarded as a matter of *discrete* semantic construal, rather than of gradiency: it is the case that in Italian it is more natural to construct the verb *atterrare* as unergative, rather than as unaccusative, whenever a volitional controller is involved ($\Psi[+R]$). The fact that this observation does not hold for *arrivare*-verbs has been argued to be related to the fact that prototypical verbs of change of location cannot be construed as 'creation verbs' (cf. *supra*).

Similarly, I want to argue that the relevant crosslinguistic contrast in (42), the one between (42a) and (42b,c), should not be related to gradiency effects either, since one of the combinations in the pair has a maximally specified semantic characterization (cf. (42a): $[[+T] [+r]]$): once again my claim is that gradiency is not relevant when maximal specification is involved.

- (42) a. Maria è arrossita/*ha arrossito. (cf. $[[+T] [+r]]$) (Italian)
 Maria IS blushed/HAS blushed
 b. Marie a rougi de honte (cf. $\{[[+T] [-r]]/[-R]\}$) (French)
 Marie HAS blushed of shame

- c. J heeft een uur lang gebloosd (cf. [-R]) (Dutch)
 J HAS one hour long blushed
 (42b) taken from Sorace (2000: 866; ex. (13))
 (42c) is taken from McClure (1990: 314).

The relevant contrast between (42a) and (42b,c) should be explained (I argue) on the basis of our ability to semantically construe a similar conceptual scene in more than one way. Accordingly, the Italian verb *arrossire* is a telic change of state verb, while both the Dutch verb *bloezen* and the French verb *rougir* can be argued to describe an internally caused eventuality (cf. Levin & Rappaport Hovav (1995: 160) and Labelle (1990: 306), respectively). Moreover, unlike *rougir*, *bloezen* cannot be regarded as an atelic change of state verb since change verbs select BE in Dutch (cf. Lieber & Baayen (1997)). By contrast, *rougir* could in fact be argued to be construed as an atelic change of state verb (cf. [[+T] [-r]]), besides its construal as an internally caused process (cf. [-R]). Recall that both [[+T] [-r]] and [-R] are associated to HAVE-selection in French.¹³²

With the above caveats in mind, next let us see how one can express the aux-selection variation in Italian vs. French in the present framework: the different relevant cut-off points shown in (34) and (36) would be formally depicted as (43) and (44), respectively.

- (43) a. [[+T] [+r]] selects *essere*
 b. [[+T] [-r]]
 c. [[-T] [-r]]
 -----"cut-off point"
 d. [-R]
 e. [+R] selects *avere*

¹³² See Legendre (1989: 108/161), who considers the verb *rougir* as a 'mixed verb' (*sic*). In section 2.2.4, which is devoted to reviewing Levin & Rappaport Hovav's (1995) theory of linking rules and their relevance to aux-selection, I will show they are wrong in their claim that "the Italian verb *arrossire* is an internally caused verb of change of state" (p. 159). *Arrossire* will be shown to be a telic change of state verb, period.

To conclude, I hope to have shown that, in striking contrast to Sorace's gradiency approach, my present framework provides an explanation of why some semantic determinants of aux-selection are more important than others.¹³⁴ Such an explanation has been shown to crucially depend on our adopting the distinction in (2): quite interestingly, the most important determinants coincide with the positively valued (discrete) semantic features associated to the argument structure constructions argued for in chapter 1 above.

2.2.3. *Aux-selection and ne/en-cliticization: Burzio's (1986) correlation regained*

In this section I show that the difference between Italian and French represented in (43) and (44), respectively, sheds light on an interesting problem concerning the correlation between aux-selection and *ne/en*-cliticization. For example, the Italian data in (45b,d), which contain unergative verbs, have been said to be counterexamples to Burzio's (1986) claim that ergative (i.e., unaccusative) verbs are the only monadic verbs that admit *ne*-cliticization of their argument. Following Lonzi (1985), Levin & Rappaport Hovav (1995: 275) point out that "a variety of verbs that take the auxiliary *avere* 'have' do permit *ne*-cliticization, but only when they are found in a simple tense; *ne*-cliticization is not possible when these verbs are found in a complex tense in which the auxiliary is expressed".¹³⁵

- (45) a. *Di ragazze, ne hanno lavorato molte nelle fabbriche di Shangai. (It.)
of girls, of them have worked many in-the factories of Shanghai
- b. Di ragazze, ne lavorano molte nelle fabbriche di Shangai.
of girls, of them work many in-the factories of Shangai
- c. *Di ragazzi, ne hanno russato molti nel corridoio del treno.

unspecified (i.e., 'neutralized'). We could then assume that such an exceptional assignment is to be related to BE-selection. I leave the discussion open here. Quite interestingly, notice that the verb *remain* is not a quirk of French: cf. also Zaenen (1993: 139), where it is also explicitly recognized that its Dutch counterpart (i.e., *blijven* 'to remain') must be regarded as an exceptional verb as far as aux-selection is concerned.

¹³⁴ Sorace (2000: 861) points out that "there are some important questions that I do not attempt to address. First, the reader will not find an explanation of why particular semantic components are more crucial to the selection of particular auxiliaries than others".

¹³⁵ It has been impossible for me to consult Lonzi (1985). The following discussion is then based on Levin & Rappaport Hovav's (1995: 275-277) and Maling's (1994) positive reviews of her work.

- of boys, of them have snored many in the corridor of the train
- d. Di ragazzi, ne russavano molti nel corridoio del treno.
of boys, of them snored many in-the corridor of the train

Levin & Rappaport Hovav (1995: 276-277; ex. (106)-(107))

Levin & Rappaport Hovav (1995: 277) conclude that "phenomena said to involve 'surface unaccusativity' (...) are not unaccusative diagnostics strictly speaking, but rather to a large extent receive their explanation from discourse considerations" (cf. Lonzi (1985)). In particular, they notice that "unergative verbs are found in this construction under circumstances similar to those that sanction the appearance of English unergative verbs in locative inversion- that is, in contexts where the verb describes a characteristic activity or process of the entity it is predicated of" (p. 276).¹³⁶

However, notice that the problem remains: such a discourse-based observation does not account for the fact that *avere*-selection is not allowed in those constructions in (45a,c). Perhaps one could note that their observation only holds for imperfective tenses, since the latter can be regarded as the idoneous ones for expressing habitual activities. However, the following threesome from Centineo (1996: 230-231; fn. 6) shows that this is not the case, since in the so-called *passato remoto* unergative verbs are also compatible with *ne*-cliticization (cf. (46c)).

- (46) a. Ce ne nuota tanta di gente, in quella piscina. (Italian)
there of.them swim much of people, in that pool
- b. ??Ce ne ha nuotato molta di gente in quella piscina.
there of.them has swum much of people in that pool
- c. Ce ne nuotò molta di gente in quella piscina.
there of.them swam much of people, in that pool

Centineo (1996: 230-231; fn. 6)

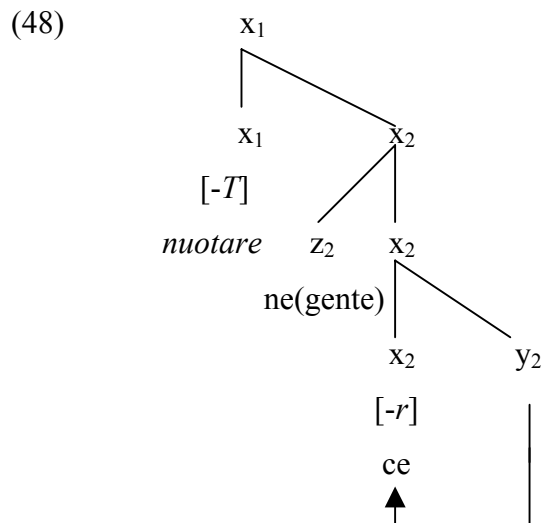
¹³⁶ But see Culicover & Levine (2001) for a critical review of Levin & Rappaport Hovav's (1995) discourse-based analysis of locative inversion. According to the former authors, the traditional unaccusative diagnostic provided by locative inversion must be regained once this unaccusative construction is separated from heavy NP inversion constructions with unergative verbs. Unfortunately, Levin & Rappaport Hovav (1995) fall into the error of mixing both kinds of constructions.

- b. Willy wiggled/danced/spun/bounced/jumped into Harriet's arms.

As noted above, the 'change' component is crucially involved in (47a), the activity one being secondary. Hoekstra nicely accounted for this fact by means of a *Small Clause* analysis: that is, in (47a) the unergative verb *wandelen* ('to walk') is unaccusativized when it subcategorizes for a SC complement, *Jan* being analyzed as the inner subject of the prepositional SC predicate, i.e., *naar Groningen*.

Mutatis mutandis, the 'state' component can be argued to be crucially involved in (46a), the activity one being also secondary here. This fact can be accounted for by positing that the verb *nuotare* ('to swim') is unaccusativized when it subcategorizes for a SC complement, *ne* (cf. *tanta di gente*) being the Figure/Theme subject of the SC predicate *ce* (cf. *in quella piscina*).

Similarly to what happens in (47), the fact that the activity component in the unaccusative construction in (46a) is not syntactically "active" can be translated into the following terms: the [+R] semantic feature lexically assigned to the unergative verb *nuotare* is not active in the unaccusative argument structure, the relevant eventive semantic feature being [-T], not [+R]: cf. (48).¹⁴⁰ In chapter 3 below I will put forward syntactic and semantic arguments in favor of this (advanced) conclusion.



¹⁴⁰ Cf. (15b) above. In chapter 3 I will show that the argument structure of both (15b) and (48) is in fact more complex. In particular, we will see that these constructions involve a *conflation* process of a subordinate unergative head associated to the [+R] feature into a main unaccusative head associated to the [$\pm T$] feature (i.e., [+T] in (15b) and [-T] in (48)).

Next I will show that the fact that unergative verbs can be associated to an existential unaccusative construction provides a nice explanation of why *avoir* is selected in those French impersonal constructions containing unergative verbs: compare (49) with (50).¹⁴¹

- (49) a. Il en a trôné des bibelots sur cette bibliothèque. (French)
 it of-them has queened books on that bookshelf
- b. Il en a roulé plusieurs dans Paris.
 it of-them has run several in Paris
- c. Il en a sauté beaucoup par la fenêtre (d'otages).
 it of-them has jumped many through the window (of hostages)
- (50) Il en est arrivé trois.
 it of-them is arrived three

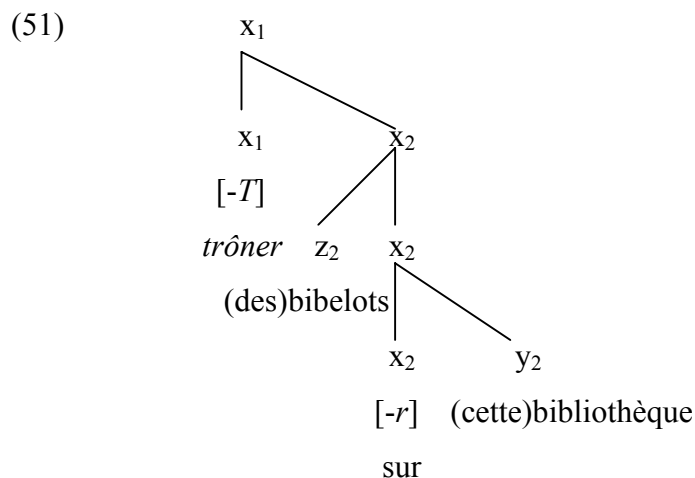
Notice that like the Italian examples in (45b,d), those examples in (49) could also be said to be counterexamples to Burzio's (1986) claim that ergative (i.e., unaccusative) verbs are the only monadic verbs that admit *en*-cliticization of their argument. In fact, Legendre (1989: 154; fn. 22) concluded that "*en*-cliticization cannot be considered a valid unaccusativity test", since the impersonal construction in French "allows, at least in some dialects of French, all unergatives" (p. 155).

However, with Burzio (1986), I think that *ne/en*-cliticization is to be considered as an unaccusative diagnostic both in Italian and French. In particular, I will assume that the existential character of unaccusative constructions like those in (49) is to be related to the presence of a 'central coincidence relation', which relates a Figure to a Ground in a presentational context.¹⁴² Accordingly, in the present terms the relevant combination of relational semantic features associated to impersonal

¹⁴¹ The examples in (49a-b) are taken from Hoekstra & Mulder (1990: 48), while those in (49c) and (50) are from Legendre (1988: 263). See Rivière (1981), Legendre (1990), Hulk (1989) and Hoekstra & Mulder (1990), among others, for relevant discussion on the French impersonal construction, which not will be reviewed here. I will limit myself to explaining why *avoir* is selected in the sentences in (49).

¹⁴² A locative PP containing a (\pm deictic) Ground has been shown to be typically obligatory in those existential constructions in (49) (e.g., cf. Hulk (1989: 64), a.o.). Following Hoekstra & Mulder (1990), I will assume that the locative PP in (49) can be analyzed as the SC predicate.

existential constructions like those in (49) is $[-T] [-r]$: cf. (51).¹⁴³ As noted above, such a semantic combination involves HAVE-selection in French (cf. (44) above).



In the two previous sections I have tried to show the theoretical and empirical advantages of separating the {discrete/syntactically transparent} semantic determinants, which are to be expressed via relational semantic features, from the {non-discrete/non-syntactically transparent} ones. Only the former can be argued to be directly relevant to the syntax-semantics interface. As a result, those gradiency effects described by Sorace (2000) are said to play an indirect role in aux-selection at that interface. Moreover, notice that it not clear at all how Sorace would deal with the crosslinguistic facts that have just been reviewed in the present section.

In the following section I will show how Levin & Rappaport Hovav's (1995) insights concerning their descriptive linking rules can be translated into the present framework.

2.2.4. *Aux-selection and linking rules*

In this section I will discuss Levin & Rappaport Hovav's (1995) theory of linking rules and their relevance to aux-selection.¹⁴⁴ In particular, I will show that their theory is quite appropriate to describe the facts, but not to explain them.

¹⁴³ In chapter 3 I will also show that the argument structure in (51) is in fact more complex. In particular, we will see that this construction involves a *conflation* of a subordinate unergative head associated to the $[\pm R]$ feature into a main unaccusative head associated to the $[-T]$ feature.

¹⁴⁴ See also Sorace (2000: 880- 884) for relevant discussion, which will not be reviewed here.

Levin & Rappaport Hovav (1995) lay out the following four linking rules, which are designed to account for the behavior of all single-argument verbs:

- (52) a. *Immediate Cause Linking Rule*
The argument of a verb that denotes the immediate cause of the eventuality described by that verb is its external argument.
- b. *Directed Change Linking Rule*
The argument of a verb that corresponds to the entity undergoing the directed change described by that verb is its direct internal argument.
- c. *Existence Linking Rule*
The argument of a verb whose existence is asserted or denied is its direct internal argument.
- d. *Default Linking Rule*
An argument of a verb that does not fall under the scope of any of the other linking rules is its direct internal argument.

For example, the first rule in (52a) applies to the causer argument of (i) (prototypical) agentive verbs such as *cry*, *telephone*, *work*, etc.; (ii) verbs of emission like *shine*, *sparkle*, *stink*, etc.; (iii) agentive verbs of spatial configuration like *lie*, *sit*, *stand*, etc.; (iv) nonagentive verbs such as *cough*, *sleep*, *snore*, etc.; (v) internally caused verbs such as *bloom*, *blossom*, *wilt*, etc.¹⁴⁵

The second rule in (52b) applies to the theme argument of (i) telic verbs of inherently directed motion such as *arrive*, *come*, *go* etc.; (ii) atelic verbs of inherently directed motion such as *descend*, *fall*, *rise*, etc.; (iii) atelic verbs of indefinite change of state such as *bloom*, *blossom*, *wilt*, etc.; (iv) telic verbs of change of state such as *break*, *freeze*, *open*, etc.

The third rule in (52c) applies to the theme argument of (i) verbs of existence like *exist*, *loom*, *survive*, etc.; (ii) verbs of appearance like *appear*, *arise*, *develop*,

¹⁴⁵ According to Levin & Rappaport Hovav (1995: 97/160-162), *blossom*-verbs fall under those two linking rules in (52a) and (52b) when they express an "internally caused change of state".

etc.; (iii) verbs of occurrence like *occur*, *happen*, *recur*, etc.; (iv) verbs of disappearance like *die*, *disappear*, *vanish*, etc.¹⁴⁶

Finally, the fourth rule in (52d) applies to the argument of those verbs that satisfy none of the properties described in the other rules. For example, this rule will apply to nonagentive verbs of manner of motion such as *bounce*, *roll*, *spin*, etc.

However descriptively adequate those linking rules in (52) turn out to be, it should be clear that, as noted by Baker (1997) and Mateu (1997), those linking rules do not have any explanatory power. Notice that the basic criticisms I leveled against descriptive approaches to argument selection like Dowty's (1991) (cf. section 2.2.1 above) can also be applied to theirs: To put it crudely once again, one would like to know what determines the number of linking rules, why four and not seven or ten linking rules?! Which explanatory reasons can be said to underlie the fact that 'immediate cause', 'directed change' and 'existence/appearance' turn out to be the relevant properties,¹⁴⁷ the remaining semantic properties being argued to fall into the Default Linking Rule in (52d)?

Indeed, such a criticism should not be taken as a trivial one. If explanatory constraints are lacking, one would like to know *why* the following state of affairs (i.e., the inverse one to (52)) is wrong: namely, one linking rule for unaccusative verbs, two linking rules for unergative verbs, and the default one for the remaining unergative verbs. However bizarre such an approach turns out to be, it is not clear to me what is the *explanatory* reason that in principle undermines it, favoring then the apparently more adequate approach in (52).

¹⁴⁶ Levin & Rappaport Hovav (1995: 152) point out that “this rule would also apply to certain dyadic and triadic verbs, specifically verbs of creation such as *make* and *build* and verbs of putting such as *put* and *place*, since the object of these verbs is in one instance an entity that comes to exist and in the other an entity whose existence at a new location is asserted”.

¹⁴⁷ Moreover, Levin & Rappaport Hovav (1995: 153) recognize that the overlapping between their linking rules (52b) and (52c) is not a problem for their theory: “Depending on how the notion of directed change is defined, verbs of appearance may fall under the Directed Change Linking Rule as well as the Existence Linking Rule, since appearance could be regarded as a directed change. However, this possibility does not detract from our analysis. There is no reason why more than one linking rule may not apply to a single argument. In fact, this is precisely what happens in Dowty's (1991) proto-role approach to linking, where several of the entailments associated with a particular proto-role may apply to a particular argument”. However, as we will see below, this overlapping is eliminated, once it is accepted that verbs of directed change and verbs of existence/appearance are assigned the very same semantic feature, i.e., [\pm T]: both directed change verbs and appearance verbs are assigned the [+T] value, while the existence verbs are assigned the [-T] value.

To be sure, Levin & Rappaport Hovav's linking theory reaches the descriptive level of adequacy any theory of the syntax-lexical semantics interface must aim at. In fact, notice that the Default Linking Rule plays a crucial role in reaching this goal, since this rule is postulated in order to account for the behavior of *all* single-argument verbs that are overlooked by the other rules. However, this proposal triggers a counter-productive effect: although the Default Linking Rule contributes decisively to reaching the descriptive level, the explanatory level of adequacy is lost for ever if this rule is postulated. Thus, when facing the difficult cases, it seems to me that it is not the best solution to posit a "default object' (be it a 'Default Linking Rule', a 'Default Case' (cf. Fillmore's (1968) 'Objective Case') or a 'Default Theta-Role' (e.g., the Theme role, which has often been considered as the most neutral semantic role) or whatever device). Thus, quite frequently, the very existence of a 'default object/device' could lead us to acknowledge that any approach which makes use of it is probably not correct in the end.

Quite interestingly, the present formal approach to the relational syntax and semantics of argument structure allows us to provide some explanatory constraints to those linking rules in (52); meaning components like 'immediate cause', 'directed change' or 'existence' could in principle be said to be relevant at the syntax-lexical semantics interface since these notions are to be filtered into the relational semantics associated to those argument structure configurations argued for in chapter 1 above. The relevant partial correlations are depicted in (53).¹⁴⁸ More relevant for the purposes of the present section is the fact that those meaning components singled out by Levin & Rappaport Hovav could also in principle be said to be semantic determinants of aux-selection in languages like Italian.

¹⁴⁸ I say *partial* correlations, since for example I do not agree with Levin & Rappaport Hovav's (1995) claim that the unaccusative verb in (i) falls under the 'Directed Change Linking Rule' in (52b), while the one in (ii) falls under the 'Default Linking Rule' in (52d). In the present framework, Levin & Rappaport Hovav's (1995: 172) 'atelic verbs of inherently direction motion' (e.g. *salire* 'rise') and those atelic verbs that can express a non-agentive manner of motion (e.g., *rotolare* 'roll') (cf. Levin & Rappaport Hovav (1995): 155) both are to be assigned the $[[+T] [-r]]$ combination: that is, both unaccusative verbs can be argued to express an atelic transition in (i-ii).

- (i) La temperatura è salita.
the temperature is risen
- (ii) La palla è rotolata.
the ball is rolled

(53)	a.	'immediate cause'	↔	$[\pm R]$	<i>avere</i> -selected
	b.	'directed change'	↔	$[[+T] [\pm r]]$	<i>essere</i> -selected
	c.	'existence'	↔	$[[-T] [-r]]$	<i>essere</i> -selected
	d.	'default'	↔	$[[+T] [-r]]$	<i>essere</i> -selected

Notice that the very same criticism leveled above as to why there is only one linking rule for unergatives and three for unaccusatives, also holds with respect to the aux-selection problem in languages like Italian (see section 2.2.2 above): that is to say, why is it the case that there is only one semantic determinant for *avere*-selection and three for *essere*-selection?

Indeed, I think that Levin & Rappaport Hovav hit the nail on the head when pointing out that it is *only* one linking rule that is relevant for unergative verbs (and hence only one semantic determinant for *avere*-selection). Their proposal concerning the linking of the (external) argument of unergative verbs is quite compatible with the view of the syntax-semantics interface I have argued for in chapter 1 above. One step further would be to posit that those linking rules in (52b,c,d) are to be collapsed into a single one. Notice that the present framework allows (in fact, forces) us to take such a step, which was in fact already taken by Baker (1997: 131) and Mateu (1997) as well.¹⁴⁹ whereas unergative verbs are *only* sensitive to the meaning of an (internal) causal relation (i.e., my $[\pm R]$), unaccusative verbs are *only* sensitive to the meaning of a transitional relation (i.e., my $[\pm T]$).

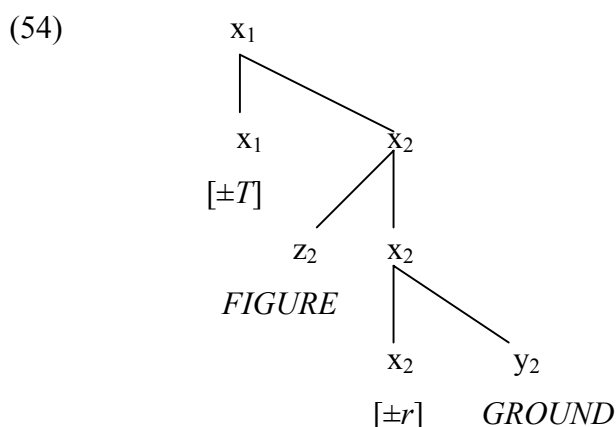
Accordingly, I agree with Levin & Rappaport Hovav's claim that the Immediate Cause Linking Rule allows one to generalize the statement that agents are part of a broader range of causes. As noted above, the present formalization is nicely suited to account for this fact: the $[+R]$ value is reserved for truly agentive unergative verbs (i.e., those involving the existence of a volitional controller), the $[-R]$ value being associated to those non-agentive unergative verbs.

Similarly, it would seem plausible to take the following step when dealing with unaccusative verbs: i.e., to generalize the statement that 'directed change',

¹⁴⁹ According to Baker (1997: 131), "there seems to be no inherent barrier to collapsing the Directed Change Linking Rule and the Existence Linking Rule into a single one". Needless to say, Baker's remark is a step further towards the achievement of the UTAH, which argues for a non-trivial homomorphism at the syntax-lexical semantics interface. However, as noted above (cf. (3)), Levin & Rappaport Hovav do not want to accept it. Cf. chapter 1 above for a positive review of Baker's (1997) radical/strong version of UTAH.

'appearance' and 'existence' can be subsumed under the {positive/negative} *transition* argued for in chapter 1 above.

Furthermore, as argued forcefully by Mateu (1997), the configurational semantics of those verbs supposed to fall under the Default Linking Rule is identical to that of those verbs supposed to fall under the Directed Change Linking Rule or the Existence Linking Rule. In particular, Mateu (1997) showed that all verbs that are supposed to fall under these three linking rules have the very same relational semantic structure, which corresponds to the one in (54) in the present framework. The grammatically relevant differences between these verbs are to be mainly drawn from the positive/negative values associated to the relational elements.



In particular, Mateu (1997) argued that the crucial difference between *roll*-verbs (e.g., *bounce*, *roll*, *spin*, etc.) and *arrive*-verbs (e.g., *arrive*, *come*, *enter*, etc.) is due to the fact that the former involve a 'central coincidence relation' (cf. [-r]), whereas the latter involve a 'terminal coincidence relation' (cf. [+r]), this accounting for their (lexical) atelicity and telicity, respectively. On the other hand, *arrive*-verbs and *appear*-verbs (e.g., *appear*, *die*, *happen*, etc.) were argued to have the very same relational semantic structure: both classes involve a 'positive transition', and both involve a 'terminal coincidence relation' between two non-relational arguments (i.e., Figure and Ground).

With the previous background in mind, let us review Levin & Rappaport Hovav's (1995) account of why *essere* (BE) is selected in their relevant data given in

(55).¹⁵⁰ In doing so, I will show that we can provide a more elegant and simple explanation of why the problematic verbs in (55) are unaccusative. To advance the relevant theoretical conclusion, I will show that Levin & Rappaport Hovav's claim that those linking rules in (52) are "ordered" (*sic*) makes no sense in the present framework.

- (55) a. Luigi è caduto apposta. ('agentive verb of inherently directed motion')
Luigi IS fallen on purpose
- b. Gianni è arrossito. ('internally caused verb of change of state')
Gianni IS blushed

When discussing examples like those in (55), Levin & Rappaport Hovav posit that their unaccusativity is due to the fact that the Directed Change Linking Rule in (52b) and the Existence Linking Rule in (52c) take precedence over the Immediate Cause Linking Rule in (52a). Given this, their argumentation is as follows: although *cadere apposta* or *arrossire* involve an internal cause, both are said to be unaccusative verbs and not unergative verbs, since a 'directed change' (in the case of *cadere* and *arrossire*) can also be said to be implicated in their meaning.

My reply to Levin & Rappaport Hovav (1995:158-166) will only deal with two relevant points of divergence:

(i) With Sorace (2000: 881), I think that Levin & Rappaport Hovav's generalization that agentive verbs are *always* to be regarded as internally caused is not well-grounded.¹⁵¹ According to the latter, if a verb is agentive, it will fall under the Immediate Cause Linking Rule in (52a). However, I want to argue that the *semantic* notion of agentivity to be drawn from the positive value [+R] must be distinguished from a more general *conceptual* notion of what 'agentivity' is. Therefore, *cadere apposta* does not behave as an unergative verb, since, in spite of

¹⁵⁰ The examples in (55) are discussed in Levin & Rappaport Hovav (1995: 158-166).

¹⁵¹ Sorace (2000: 881) criticizes such a generalization on the basis of her gradiency approach to aux-selection: "As for agentivity, L&RH's reasoning is that the notion of 'internal causation' encompasses that of agentivity, since agentive verbs are always internally caused, but internally caused verbs are not necessarily agentive. But the two notions need to be distinguished to account for the fact that auxiliary selection is most determinate with verbs of nonmotional process and overall least determinate with verbs of uncontrolled process".

its 'conceptual' agentivity triggered by the adverbial *apposta* 'on purpose', it is the case that this verb does not involve a causal relation, but a transitional relation plus a spatial relation. In short, I do not see any compelling reason to *necessarily* subsume the conceptual notion of 'agentivity' under the relational semantic notion of 'causation'.¹⁵² Accordingly, in my framework no "competition" between 'causation' and 'transition' is involved in the examples in (55a-b). That is, no ordering device is needed here, since it is only the latter semantic notion that can be argued to be involved in these unaccusative sentences.

(ii) Concerning so-called 'internally caused verbs of change of state' like *arrossire*,¹⁵³ I will limit myself to commenting on the following quote from Levin & Rappaport Hovav (1995: 159):

(56) “Blushing is conceptualized as an internally caused eventuality, as *shown* <emphasis added:JM> by the fact that in Italian (and in English too, for that matter) this verb does not have a lexical causative; therefore, the Italian verb *arrossire* is an internally caused verb of change of state: <cf. their (65) example: **Il complimento/mio padre mi ha arrossito* (lit.: ‘the compliment/my father has blushed me’): JM>”.

However, I think that Levin & Rappaport Hovav's reasoning in (56) is a *non-sequitur*: that is, the fact that *arrossire* does not have a lexical causative does not *necessarily* entail that this verb involves an internally caused eventuality. Rather I think that its inability to take a lexical causative is to be related to the lexical fact that this verb as well as many other unaccusative verbs expressing a change of

¹⁵² See Cruse (1973), DeLancey (1984, 1985), Gràcia (1989b), Jackendoff (1990), Demonte (1991b: chap. 1), Van Valin & Wilkins (1996), Van Valin & LaPolla (1997), Croft (1998), Arad (1998), Moreno Cabrera (2001), among others, for relevant discussion concerning the distinction between 'agentivity' {and/vs/or} 'causation'.

¹⁵³ Following McClure (1990), Levin & Rappaport Hovav (1995: 159) point out that *arrossire* behaves as a telic (change of state) verb with respect to time adverbials:

(i) *G è arrossito per 10 minuti.

G IS blushed for 10 minutes

(ii) G è arrossito in un secondo.

G IS blushed in one second

McClure (1990: 314; table 4)

location/state (e.g., *cadere* ('to fall'), *disparire* ('to disappear'), *nascere* ('to be born'), etc.) do not accept a *direct* causation: cf. (57) with (58).

- (57) a. *Gianni mi ha caduto.
Gianni me has fallen
- b. *Il vento ha caduto le foglie alla mia casa.
the wind has fallen the leaves to my house
- c. *Gianni mi ha disparito.
Gianni me has disappeared
- d. *Il complimento/Mio padre mi ha arrossito.
the compliment/my father me has blushed
- (58) a. Gianni mi ha fatto cadere.
Gianni me has made fall
- b. Il vento ha fatto cadere le foglie alla mia casa.
the wind has made fall the leaves to my house
- c. Gianni mi ha fatto disparire.
Gianni me has made disappear
- d. Il complimento/mio padre mi ha fatto arrossire.
the compliment/my father me has made blush

Accordingly, whereas an (internal) causal relation can be truly shown to be involved in the Dutch verb *bloezen*,¹⁵⁴ in the English verb *blush*,¹⁵⁵ and in the French

¹⁵⁴ Levin & Rappaport Hovav (1995: 160) point out that this verb lacks the change-of-state interpretation associated to the Italian verb *arrossire*.

- (i) J heeft een uur lang gebloosd.
J has one hour long blushed
- (ii) *J heeft in een uur gebloosd.
J has in one hour blushed

McClure (1990: 314; table 4)

Quite clearly, the fact that *bloezen* takes the auxiliary *hebben* (HAVE) shows that the verb is unergative. See also the comments on (42c) above regarding the verb *bloezen*.

¹⁵⁵ As Levin & Rappaport Hovav (1995: 160) point out, “if the following examples of the *X*'s way and cognate object constructions are indicative, then English, like Dutch, treats the verb *blush* as a “be in state” verb with an unergative classification.” They adduce the following examples:

- (i) My 92-year-old mother would blush her way through this particular collection of stories, jokes and rhymes. [V.G. Paley, “The Schoolyard Jungle,” 43]
- (ii) Frederick roused from his preoccupation, sprang to his feet, blushing the blush of shame. [P.G. Wodehouse, “Portrait of a Disciplinarian,” 116]

verb *rougir*,¹⁵⁶ there is **no** compelling reason to assume that the same holds for the Italian verb *arrossire*.

To put it differently, no competition between 'causation' and 'transition' can be said to be involved in the example in (55b). That is, no ordering device is needed here, since it is only the latter semantic notion that can be argued to be involved in (55b): i.e., [+T]. So *essere* (BE) is selected in (55b). Accordingly, notice that *internally caused change of state verb* is not but a misnomer, since intransitive verbs can be construed as involving an (internal) cause (hence their unergativity) **or** as expressing a transition (hence their unaccusativity): indeed, both construals cannot be said to "coincide" in the syntactically transparent domain of semantic construal.

So far my present account of the relational syntax and semantics of phenomena related to the so-called 'aux-selection problem'. As stressed above, it should be clear that my intention has not been that of providing a more or less exhaustive descriptive account (e.g., cf. Sorace (2000) for an excellent attempt). Rather I have limited myself to analyzing this 'unaccusative diagnostic' with the very specific (but ambitious) goal of showing that it is syntactically transparent notions of

(iii) Catharine blushed a blush of anger. [1828 Scott, F.M. Perth III, 53; cited in Visser, F.Th. (1963: 417) *An Historical Syntax of the English Language. Part One: Syntactic Units with One Verb*. Leiden: E.J.Brill]

Notice that the *X's way* construction has been argued to be a diagnostic of unergativity: e.g., cf. Tenny (1994). Moreover, the cognate object construction has also been considered to be a diagnostic for unergative verbs: *John laughed a cruel laugh vs. *John arrived a fantastic arrival*.

¹⁵⁶ Cf. Labelle (1990, 1992b) for an excellent descriptive treatment of contrasts like the following one (Labelle (1990: 6; ex. (14)):

- (i) a. Jeanne rougit.
 a'. *Jeanne se rougit.
 'Jeanne blushes'
 b. Il vit le mouchoir se rougir soudain.
 b'. *Il vit le mouchoir rougir soudain.
 'He saw the handkerchief become suddenly red'.

According to her, "(14a <(ia): JM>), for example, denotes a process that takes place in and by the subject. The intransitive is used. The reflexive is impossible. (14b <(ib): JM>) denotes a change that is not internal to the subject but that affects it. In this case, the reflexive is used." (p. 306). After discussing some relevant unaccusative diagnostics (e.g., aux-selection, impersonal construction, *en*-cliticization, etc.), Labelle (1990, 1992b) concludes that the reflexive construction is unaccusative, whereas the intransitive construction is unergative. But see Legendre (1989: 108/161), who considers the intransitive verb *rougir* as a 'mixed verb' (*sic*). Moreover, as suggested above (cf. the discussion on (42b)), *rougir* could also be argued to be construed as an indefinite change verb (hence its [+T] [-r]; see also Sorace (2000: 866)) besides its construal as an internally caused verb (cf. [-R]). In the first construal *rougir* would be predicted to behave as an unaccusative verb, while in the second one it would be predicted to do so as an unergative verb. It seems however to be the case that *rougir* is typically construed as an unergative verb (cf. Labelle (1990, 1992b)). Indeed, more research is needed to clarify such a complex issue.

semantic construal that turn out to be directly relevant at the syntax-lexical semantics interface. As emphasized above, if my analysis is on the right track, conceptual content notions like 'prototypicality' and 'gradiency' cannot be said to play a crucial role at that interface (if any, they can be said to do so in an indirect way). Moreover, I have shown that descriptive artifacts like the so-called 'linking rules' are not to be taken as relevant theoretical constructs at that interface either.

Next I will concentrate on providing an explanation of why the Unaccusative Hypothesis (as conceived of in section 2.1 above) can also be taken as a useful working hypothesis when dealing with the argument structure analysis of a construction which to the best of my knowledge has not been discussed in the very extensive literature on unaccusativity, i.e., the so-called 'progressive construction'.¹⁵⁷ In doing so, my intention is twofold: on the one hand, I will try to show the theoretical and empirical advantages of applying the theory of argument structure argued for in chapter 1 to a new case study. On the other hand, I will take pains to connect the present formal analysis of the progressive construction (i) with Bolinger's (1971) insightful descriptive remarks on the English progressive, and (ii) with what I consider a very plausible *localistic* view adopted in many functionalist accounts, both being systematically neglected in the formal semantics literature devoted to this construction. Two alternative formal approaches are also briefly reviewed: Demirdache & Uribe-Etxebarria's (2000) syntactic approach to the temporal relations involved in the progressive and Parsons's (1989) neo-davidsonian logical account.

2.3 Unaccusativity extended: On the complex argument structure of the progressive construction

The main proposal I will argue for in this section is that the progressive construction must be regarded as implying a locative unaccusative structure over the corresponding argument structure lexically assigned to the verb. That is to say, the complex thematic structure involved in sentences like those in (59a) and (60a) will

¹⁵⁷ For a notable exception, see Mateu & Amadas (1999b), who put forward an analysis of the progressive construction based on Mateu's (1997, 1999) theory of *Relational Semantics*. Here I will not review our joint work on how Case properties are assigned in the progressive construction in English and Basque. But see section 2.3.3. below for some brief remarks on Case assignment in the Basque progressive construction.

be argued to comprise that corresponding to *{laugh/break}* plus the Figure-Ground configuration provided by the unaccusative structure corresponding to the 'locative' verb *be*.¹⁵⁸

- (59) a. John was laughing.
b. John laughed.

- (60) a. John was breaking the window.
b. John broke the window.

To start with, notice that, as shown in (61), the kind of 'localistically-extended argument structure' alluded to above is much more transparent in languages like Basque, French or Dutch.¹⁵⁹ Thus, for example, a locative structure can be posited in the Basque example in (61a), where the nominalized form of the verb has inessive (i.e., locative) case, in the French example in (61b), where a spatial PP is used (cf. *en train de*), or in the Dutch example in (61c), where a locative preposition is also made explicit (cf. *aan*).

- (61) a. Jon leihoa apur-tze-n dago.¹⁶⁰ (Basque)
Jon-ABS window-ABS break-NOM-LOC be-3sg.ABS
'John is breaking the window'.

¹⁵⁸ It is interesting to point out that the verb selected in the Spanish progressive construction is *estar*, which diachronically derives from the Latin locative verb *stare* (cf. 'stand'/'stay'): cf. (i). This verb is typically used with either locative or stage-level predicates: cf. (ii). Notice then that this provides empirical evidence for the analysis of the progressive as involving a locative structure.

- (i) a. Juan está comiendo. (Spanish)
Juan ESTAR-3s eating
'Juan is eating.'
b. Está comiendo una manzana.
ESTAR-3s eating an apple
'S/he is eating an apple.'
- (ii) a. Juan está en la habitación. (Spanish)
Juan ESTAR-3s in the room
b. Juan está cansado.
Juan ESTAR-3s tired
c. Juan está sin comer
Juan ESTAR-3s without eat-INF

¹⁵⁹ For the claim that a locational semantics is employed to express a progressive aspect, see also Anderson (1971), Comrie (1976), Lyons (1977), Traugott (1978), Heine et al. (1991), Heine (1994), Bybee et al. (1994), among others.

¹⁶⁰ ABS = absolutive case; NOM = nominalizer affix; LOC = locative affix.

- b. Jean est en train de casser la fenêtre. (French)
 Jean IS in along of break the window
- c. Jan is het venster aan het breken. (Dutch)
 Jan IS the window on the break

Quite interestingly, in favor of a localistic approach to the progressive construction are the following words from Bybee & Dahl (1989: 79):

(62) “(...) it is possible that locative meaning contributes to most if not all progressive constructions (...). We have not found a clear example of a progressive construction formed with a non-locative copula and a main verb with no other elements involved”.

This notwithstanding, it could be argued that there is no compelling evidence for one to analyze the English data in (59a) and (60a) on the same localistic basis as that underlying the examples in (61).

However, I want to claim that Bolinger’s (1971) insightful arguments (cf. section 2.3.1 *infra*), which were originally put forth to show that the *-ing* of the progressive is an adverbial nominal, can also be argued to give support to the localistic analysis of the English progressive. I will then review some of Bolinger’s arguments here, since, as shown below, his arguments can be taken as crucial empirical evidence for the analysis of the relational syntax and semantics of the progressive construction presented in section 2.3.2. below.

2.3.1. Bolinger’s (1971) remarks on the English progressive

Before presenting his own empirical arguments for regarding the *-ing* of the progressive as an adverbial nominal (i.e., as a PP from which the preposition has been deleted (*sic*)),¹⁶¹ Bolinger notes the well-known fact that the English progressive is historically derived from a combination of *be* with a prepositional phrase:¹⁶²

¹⁶¹ Cf. section 2.3.2 below for the claim that the preposition is NOT *deleted*, as argued by Bolinger, but *incorporated*.

¹⁶² Quite interestingly, he also points out that “a trace still survives in the dialectal prefix *a-* of *He is a-working*, another in the dialectal use of *after*, e.g., *He is after telling her*, and still another in the temporal *on* of *On assuming command he ordered a general amnesty*. It has also recently been

(63) He is working (< He is on working).¹⁶³

Notice also the compatibility of his following remark with the localistic approach to the progressive construction: "Adverbial nominals are commonplace in constructions that refer to position in or motion through space and time. It should not seem strange that the progressive represents a similar construction" (p. 247).

- (64) a. It is (at) ten miles from here.
b. He is (at) home.
c. I was there (for) an hour.
d. They walked (for) ten miles.

Bolinger puts forward some arguments for an underlying preposition in the progressive. For example, he points out that *at* is used in questions that are answered by the progressive:

(65) What are you at now? I'm getting these reports ready. I'm writing a book.

More interesting is the fact that to cleave a progressive, a preposition is required:

(66) Is it studying he's at or making love? (cf. *Is it studying he is or making love?)

Locative prepositions like *at* and *on* are also found with action nominals, which parallel the progressive construction:

- (67) a. He is at work. He is working.
b. She is at prayer. She is praying.

pointed out that the preposition *at* is still used in the standard language when an action is pronominalized: *He was working an hour ago and I guess he's still at it*" (p. 246).

¹⁶³ Bolinger's (1971) examples are not enumerated. Unless otherwise noted, it should be clear that the examples to be presented in this section have been taken from his work.

- c. They went on a hike. They went hiking.
- d. They went on a picnic. They went picnicking.

Bolinger also offers the following subtle (though quite decisive, in my opinion) argument: "(...) the intensifier *all* is acceptable with prepositional phrases referring to location to the extent that they are not literal, i.e., that they describe the subject instead of telling where he or it is" (p. 248). Quite interestingly, he notes that there is a similar restriction involved in the progressive (cf. (68c-f)).

- (68) a. He's all in a dither.
- b. *He's all in New York.
- c. She's all bubbling with enthusiasm.
- d. *She's all singing with happiness.
- e. My heart is all fluttering.
- f. *My heart is all pumping.

On the other hand, the prepositional-like nature of *-ing* can also be shown on the basis of the fact that progressives readily share *to be* in conjunctions with prepositional phrases and other adverbs:

- (69) a. They're already in position and chomping at the bit.
- b. He's here again and looking for trouble.

Furthermore, notice that the functionalist claim that the typical function of the progressive periphrasis is to give the location of an agent as in the middle of an event (e.g., cf. Bybee et al. (1994: 133)), can be nicely based on the following empirical argument. According to Bolinger, a *where*-question, normally answered by a locative adverbial or prepositional expression, may also be answered by a progressive, the answer being intuited to be responsive. Compare then the two following dialogues, where B's utterance can be taken as locating an agent in the middle of an activity.

- (70) A: - Where's Brother Rollo?
- B: - He's at confession.

- (71) A: - Where's Joe?
 B: - He's reading.

Finally, I will conclude the present review by noting one powerful argument given by Bolinger as evidence for an underlying nominal in the *-ing* of the English progressive. According to him, "in the progressive, the making of compound verbs (especially those referring to diversions) by incorporating the direct complement of the verb reflects the generation of noun compounds by the same process. It does not normally extend to other parts of the verb paradigm; when it is extended, it is felt as a back-formation" (p. 249).

- (72) a. What are the mountain boys doing this week end? They're coon-hunting.
 Coon-hunting is a sport. // *They coon-hunted.
- b. I'm trout-fishing; it's great fun.
 Trout-fishing takes skill. // *Do you trout-fish?

In the following section Bolinger's arguments reviewed above are to be taken as strong empirical evidence on which I base the present analysis of the complex argument structure involved in the English progressive.

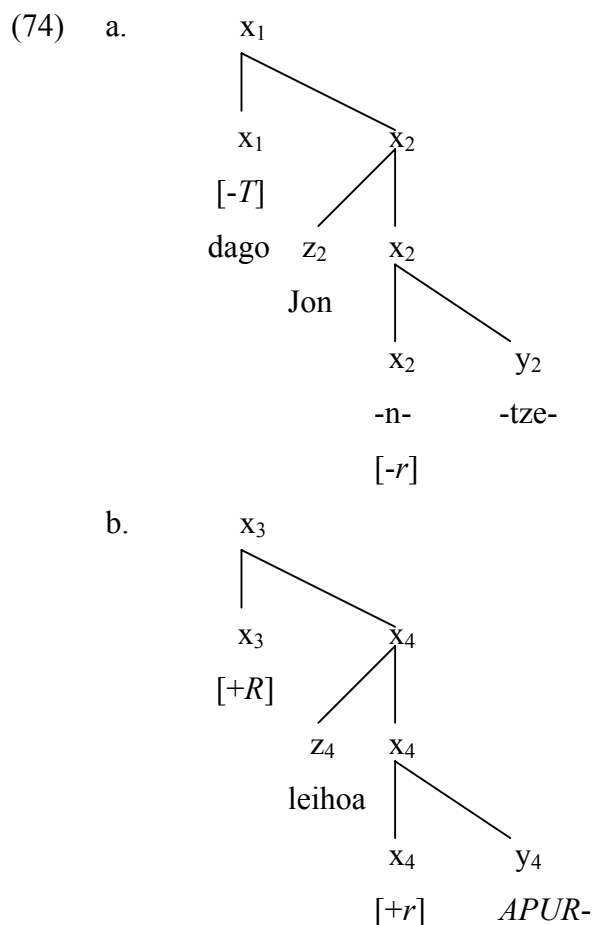
2.3.2. *On the relational syntax and semantics of the progressive construction*

In this section I will provide a relational syntactic and semantic analysis of the progressive construction. For expository reasons, first I will analyze the more transparent Basque example in (61a), repeated in (73a) below. Next we will see why the same complex argument structure analysis can also be argued to hold for the English example in (60a), repeated in (73b).

- (73) a. Jon leihoa apur-tze-n dago¹⁶⁴ (Basque)
 Jon-ABS window-ABS break-NOM-LOC be-3sg.ABS
 'Jon is breaking the window'.
- b. John was breaking the window.

¹⁶⁴ ABS = absolutive case; NOM = nominalizer affix; LOC = locative affix.

In particular, the progressive construction in (73a) can be argued to involve the unaccusative argument structure depicted in (74a) *plus* the transitive argument structure depicted in (74b). Recall that the semantic features $[-T]$, $[-r]$, $[+R]$, and $[+r]$ are to be taken as shorthand for 'negative transition', 'central coincidence relation', 'positive source relation', and 'terminal coincidence relation', respectively. A mnemonic prose for (74a) is '*be [Jon centrally located in some unspecified Ground]*', while an adequate one for (74b) is '*(Jon)¹⁶⁵ [cause [the window broken]]*'.



To put it in descriptive terms, while (74a) expresses the existence of an individual in an unspecified location, (74b) expresses a causative event of change of state. To put it more technically, in (74a) a negative transitional relation x_1 subcategorizes for a non-eventive spatial relation x_2 , headed by a central coincidence relation. Due to its birelational nature, x_2 puts two non-relational elements z_2 (i.e., the

¹⁶⁵ As noted in chapter 1 above, I assume that the external argument is external to the lexical argument structure (Hale & Keyser (1993f)).

Figure) and y_2 (i.e., the Ground) in a central contact relation. On the other hand, in (74b), a positive source relation x_3 subcategorizes for a non-eventive spatial relation x_4 , headed by a terminal coincidence relation. Due to its birelational nature, x_4 puts two non-relational elements z_4 (i.e., the Figure) and y_4 (i.e., the Ground) in a terminal contact relation.

Furthermore, as argued above, recall that the (lexical) atelicity of the unaccusative argument structure in (74a) and the (lexical) telicity of the transitive in (74b) should be attributed to the negative and positive values of r , respectively.

Next: How those two independently generated argument structures in (74) are to be integrated in order to form a complex argument structure? The transparent morphology involved in the Basque sentence in (73a) gives us the answer. These two argument structures in (74) are integrated into the complex one in (75) by means of a nominalization process (cf. the nominalizer affix *-tze-*). As a result of this process, notice that the unspecified Ground in which the Figure *Jon* is ‘centrally located’ turns out to be the nominalized transitive argument structure in (74b) projected by the causative verb *apurtu* (‘to break’). Accordingly, a mnemonic structural paraphrase for the complex argument structure in (75) is ‘*be [Jon centrally located in [event [cause [the window [TCR break]]]*’, the emphasized part corresponding to the nominalized event: i.e., ‘*Jon is centrally located in the event of causing the window to become broken*’ (Tense Phrase_[present] added)).¹⁶⁶

¹⁶⁶ The extended argument structure analysis depicted in (75) can be regarded as somewhat reminiscent of the *tree-grafting* operation used by Clements (1975) in his account of the progressive in Ewe, an African language. According to him, progressive constructions in Ewe can be regarded as ‘Affix Verb Phrases’ (AVPs). Some examples are given in (i)-(ii):

- (i) kofi (lè) dzò-dzó-gé (Ewe)
kofi PROG leave-leave-inceptive
‘Kofi is going to leave.’
- (ii) kofi (lè) x] tù-m
kofi PROG house build-progressive
‘Kofi is building a house.’

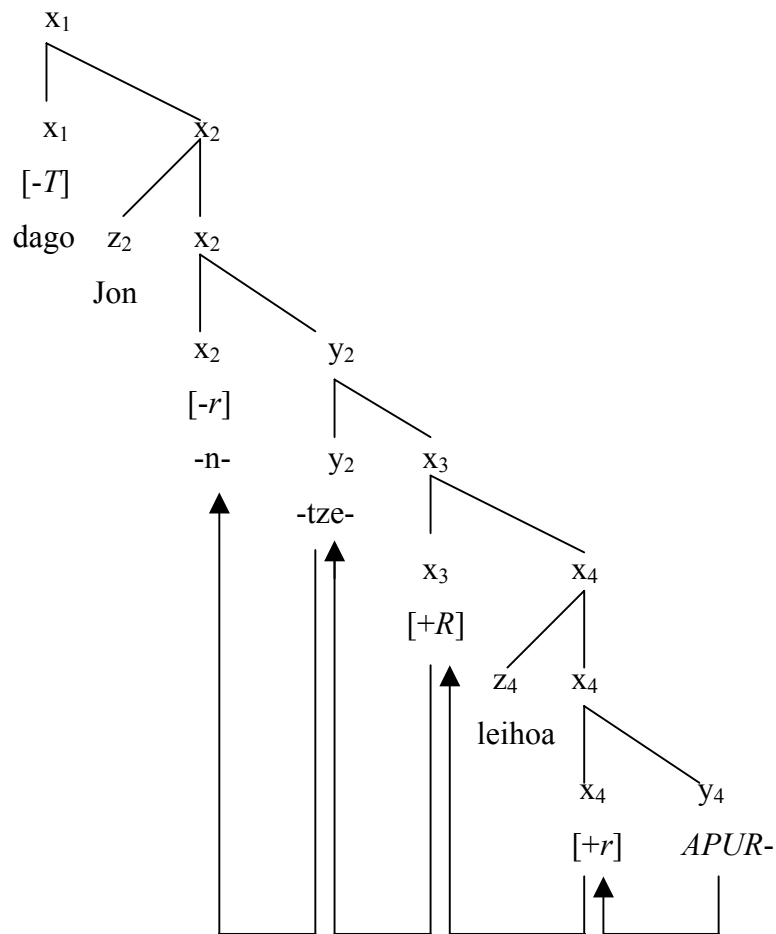
Clements (1975: 17; exs. (19c)-(20c)). The glosses are also based on Heine (1994: 260), since they are absent from Clements’s examples.

Clements put forward the following solution: “We may claim that the AVPs are generated as VPs by the base rules, and then at some subsequent point -perhaps at the beginning of the application of the transformational rules- they are ‘reanalyzed’ as NPs” (p. 38). He argues then that this ‘reanalysis’ can take the form of a rule of *tree-grafting*, whereby a substructure of the form in (iii) is extended to one of the form in (iv):

- (iii) [_{VP} [_V V Af]]
(iv) [_{NP} N [_{VP} [_V V Af]]]

In his review of Clements’s (1975) syntactic analysis, Heine (1994: 265) summarizes his main criticism as follows: “What purpose does tree-grafting serve, other than making grammar more complex?” (p. 265). Here I will not compare Clements’s analysis with mine. I will limit myself to

(75)



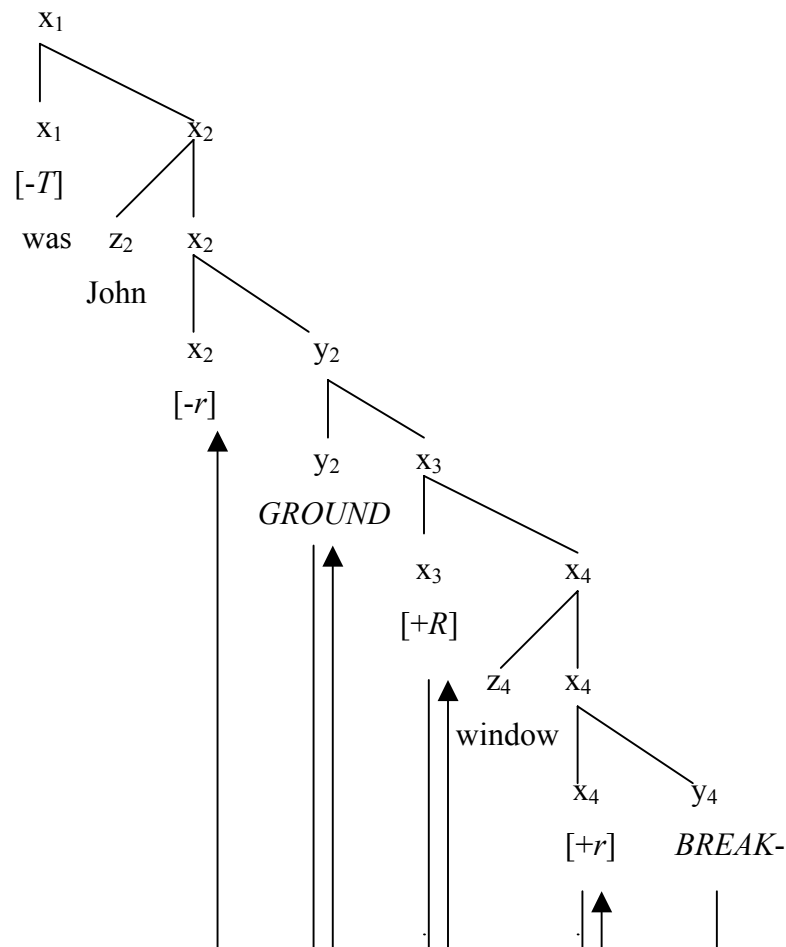
To put it in descriptive terms: instead of locating an individual (*Jon*) in a physical place, in (73a) this individual is located in the middle of the causative event expressed by the verb *apurtu* 'to break'. It should then be clear why I think that the localistic approach to the progressive construction (cf. *supra*) is on the right track.

Next I want to argue that a similar syntactically transparent meaning is to be assigned to (73b) as well: 'be [*John centrally located in [event [cause [the window TCR break]]]]*' (i.e., '*John was centrally located in the event of causing the window to become broken*' (Tense Phrase_[past] added)).

answering Heine's question. Notice that in the more sophisticated analysis in (75), the "purpose" of the argument structure extension process is clear: to project a Figure-Ground configuration over the lexically argument structure assigned to the verbal predicate. In other words, Clements's theory of tree-grafting could be argued to be more adequate when provided with an explanatory theory of argument structure, which was lacking in his 1975 paper, based on the classical rule-based approach to grammar.

Bolinger's arguments reviewed in section 2.3.1. above are more relevant than ever: quite crucially, notice that my relational syntactic and semantic analysis of the English progressive in (76) heavily depends on his arguments, since both a prepositional-like element (cf. x_2) and a nominal-like element (cf. y_2) are assumed to be present in the *-ing* form, in spite of their lacking a surface realization.

(76)



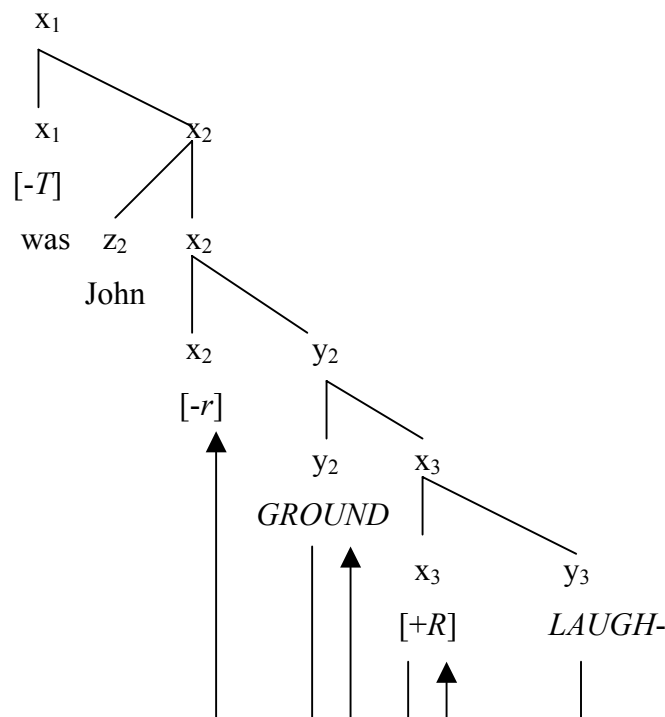
Some relevant remarks concerning the *lexical* aspect of the progressive are in order here:¹⁶⁷ On the one hand, in (73b) $TP_{[past]}$ can be argued to dominate a lexically *atelic* unaccusative argument structure (cf. the $[-r]$ value associated to x_2), which in turn dominates a lexically *telic* transitive argument structure (cf. the $[+r]$ associated to x_4). As a result, there is an *uncompleted* event involved in (73b), which sharply

¹⁶⁷ Here I emphasize *lexical* telicity (i.e., that relevant to those lexical argument structures discussed presently), since it is well-known that 'telicity' is not only sensitive to lexical factors, but to other factors as well (e.g., the quantificational properties of the direct object). For relevant discussion on the compositional nature of aspect, see Verkuyl (1972, 1993), Tenny (1994), Jackendoff (1996), Marín (2000), or Sanz (2000), among others.

contrasts with the *completed* event involved in a sentence like (60b) *John broke the window*, which is to be analyzed as a TP_[past] dominating a lexically telic transitive argument structure similar to that in (74b).

On the other hand, in (59a) *John was laughing*, TP_[past] can be argued to dominate an atelic unaccusative argument structure (cf. the [-r] value associated to x₂ in (77)), which in turn dominates the very same atelic unergative structure that is involved in (59b) *John laughed*. Accordingly, a mnemonic structural paraphrase for the complex argument structure in (77) is ‘[be [John centrally located in [process [do [laugh(s)]]]]]’ (i.e., ‘John was centrally located in the process of DOing laugh(s)’ (Tense Phrase_[past] added)).

(77)



Next it will be useful to show why the present analysis allows one to make some important predictions which are not accounted for by Demirdache & Uribe-Etxebarria's (2000) syntactic approach nor by Parsons's (1989) logical approach to the progressive construction. Basically, these predictions are those that can be drawn from Bolinger's (1971) insightful observations reviewed in section 2.3.1 above.¹⁶⁸

¹⁶⁸ Indeed, a brief note is needed to justify why I have chosen to review these two very different approaches to the progressive. I have chosen Demirdache & Uribe-Etxebarria's (2000) approach

2.3.3. *Two alternative formal approaches to the progressive construction*

Quite interestingly, the claim that the progressive construction involves the presence of a ‘central coincidence relation’ has also been recently put forward by Demirdache & Uribe-Etxebarria (2000), besides being found in Mateu & Amadas (1999b). Next I will review some of their most important claims concerning the syntax of temporal relations.

Demirdache & Uribe-Etxebarria (2000) propose a uniform syntactic approach to Tense and Aspect, whose main claims are those in (78). Following Smith (1991) and Klein (1995), Demirdache & Uribe-Etxebarria (2000) claim that the role of Aspect is to focus (pick up) an interval in the temporal contour of the event described by an utterance. The ‘Assertion Time’ is the time interval in the event time of the VP that Aspect focuses.

(78) *The phrase structure of Tense and Aspect*

Both Tense and Aspect are dyadic spatiotemporal ordering predicates taking two time-denoting phrases as arguments. The external argument of Aspect (ASP^0) is a reference time (the ‘Assertion Time’ (AST-T)), its internal argument is the time of the event denoted by the VP (the ‘Event Time’ (EV-T)). The external argument of Tense (T^0) is a reference time (the ‘Utterance-Time’ (UT-T)), its internal argument is the AST-T.

Demirdache & Uribe-Etxebarria (2000: 162; ex. (7))

Demirdache & Uribe-Etxebarria’s (2000) proposal concerning the progressive construction is that the ‘Assertion Time’ is centrally located in the ‘Event Time’. According to them, Progressive Aspect is a spatiotemporal predicate

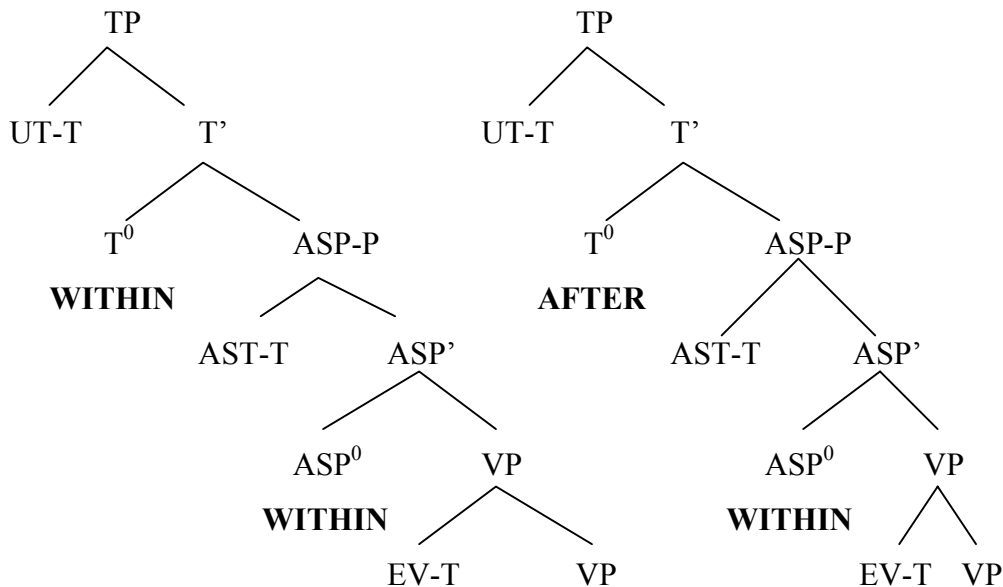
because (i) it is a syntactic account of the progressive and (ii) it also makes use of the crucial semantic opposition analyzed by Hale (1986), that concerning the central vs. terminal coincidence relations.

On the other hand, I have singled out Parsons’s (1989) event-based approach from other logical approaches to the progressive construction (e.g., cf. Dowty (1979), Kearns (1991), Asher (1992), Landman (1992), Lascarides (1992), Bonomi (1997), Portner (1998), or Zucchi (1999), among others), since there appears to be a more direct connection between Parsons’s *event-based* analysis and my present analysis of the relational semantics involved in the progressive. This notwithstanding, my general criticism of Parsons’s approach can be argued to apply to the alternative logical approaches as well.

See also Espuña (1996) for a valuable attempt to characterize the semantic, lexical, and structural factors that contribute to a progressive interpretation, and Rafel (2001) for an interesting syntactic analysis of the progressive construction based on his theory of ‘Complex Small Clauses’ (cf. Rafel (2000)).

with the meaning of *WITHIN*; it orders the ‘Assertion Time’ (that is, the Figure) *within* the ‘Event Time’ (that is, the Ground). Their syntactico-semantic analysis of the Present Progressive and the Past Progressive is depicted in (79a) and (79b), respectively.

(79) a. Present Progressive b. Past Progressive



Demirdache & Uribe-Etxebarria 2000: 165-166; exs. (11)-(12)

Here I will not discuss the intratheoretical reasons that lead Demirdache & Uribe-Etxebarria to posit that the Figure-Ground organization can be said to be extended into the syntax of the aspectual-temporal domain. Notice however that their putting semantic entities like UT-T or AST-T into the syntax is not a trivial decision, to be sure. Here I will remain skeptical about such a proposal. Be this as it may, notice that such an extension is not to be seen as necessarily incompatible with the extension proposed here, i.e., there is an unaccusative argument structure over the lexical argument structure associated to the verbal predicate.

This said, I would like to concentrate on commenting on the following quote in (80):

(80) "(...) the proposal that Aspects are spatiotemporal predicates of [+/-central coincidence] is empirically verified: the spatio-temporal predicates that we

have postulated as the abstract head of AspP surface overtly across languages. Our analysis further *explains* <my emphasis: JM> why verbs of stance, posture, or location can express Progressive Aspect (...)

(...) To conclude this section: We have argued that the Progressive is a predicate of central coincidence. This proposal *explains* <my emphasis: JM> why *location is a necessary semantic element* in progressive sentences (Bybee, Perkins, and Pagliuca 1994)".

Demirdache & Uribe-Etxebarria 2000: 178/180.

Indeed, the claim that the progressive is to be basically regarded as a predicate of central coincidence are compatible with the results functionalist linguists like Bybee, Heine and others arrived at in their typological works on the progressive construction. However, it is important to emphasize the following *non-sequitur*: to accept such a claim should not necessarily force one to accept Demirdache & Uribe-Etxebarria's syntactic proposal in (78). Of course, such a remark can be taken as quite obvious (e.g., quite probably, functionalist linguists would not accept Demirdache & Uribe-Etxebarria's *explanation* of their results), but I think that it is important to emphasize that there is a non-trivial methodological step in such a reasoning. Given this, I will limit myself to leveling the two following criticisms against their syntactic approach:

On the one hand, it is not clear at all how they would account for Bolinger's insightful remarks on the English progressive, reviewed in section 2.3.1 above. Recall that these important remarks led us to posit that (i) there are two "underlying" (to use Bolinger's word) elements involved in the *-ing* of the English progressive: a prepositional-like element and a nominal-like one. In striking contrast to Demirdache & Uribe-Etxebarria's silence on this *syntactically* relevant point, I have taken pains to provide a formal scaffolding to Bolinger's insights in section 2.3.2 above.

On the other hand, one would like to see Demirdache & Uribe-Etxebarria's complete syntactic analysis of those examples that involve the locative source of the progressive in a more transparent way than English (e.g., cf. the data in (61) above). To be sure, it is not sufficient to take these "transparent" examples as empirical evidence in favor of their non-trivial syntactically-based extension of the Figure-Ground organization into the aspectual-temporal domain. The progressive construction in Basque will help me to clarify such a criticism. For example, as

forcefully argued by Mateu & Amadas (1999b), the fact that absolutive case is assigned to *both* arguments of a Basque sentence like that in (61a)/(73a), repeated in (81a) below, is not to be taken as an idiosyncratic fact but rather as a regular one. Notice that the present proposal (i.e., in (81a), but not in (81b),¹⁶⁹ there is an unaccusative 'layer' over the argument structure lexically assigned to the transitive verbal predicate) explains that fact in a very simple and elegant way: *Jon* is assigned absolutive case since it is the subject of an *unaccusative* construction (cf. (74a)/(75) above), while *leioha* 'the window' is assigned absolutive case since it is the direct object of a transitive construction (cf. (74b)/(75)).¹⁷⁰

- (81) a. Jon leioha apur-tze-n dago¹⁷¹ (Basque)
 Jon-ABS window-ABS break-NOM-LOC be-3sg.ABS
 'Jon is breaking the window'.
- b. Jonek leioha apurtu du.
 Jon-ERG window-ABS break-pp have-3sg.ERG
 'Jon has broken the window'.

To conclude, I agree with Demirdache & Uribe-Etxebarria's (2000) claim that the "the Progressive is a predicate of central coincidence" (p. 178). However, such a predicate (morphologically realized as *-n* in (81a)) is not to be seen *primarily* as an aspectual relation relating two time-denoting phrases as arguments (AST-T and EV-T), but rather as a prepositional-like locative element relating two *nominal* elements, the Figure (i.e., *Jon*) and the Ground (i.e., the nominalized event *apurtze-*).

As promised above, let us now review Parsons's neo-davidsonian account of the progressive. According to Parsons (1989: 222), the logical forms associated to (60a) and (60b), repeated in (82a) and (82b) below, are (83a) and (83b), respectively.

¹⁶⁹ (81b) would be analyzed as the *simple* English transitive *John broke the window* (cf. *supra*).
 ERG = ergative case. See Laka (1993) for relevant discussion concerning Case Theory in Basque. Briefly, in Basque the subject of both unergatives and transitives is assigned ergative case, while the subject of unaccusatives is assigned absolutive case.

¹⁷⁰ See Amadas & Mateu (1999b: 171-173) for more details.

¹⁷¹ ABS = absolutive case; NOM = nominalizer affix; LOC = locative affix.

- (82) a. John was breaking the window.
 b. John broke the window.
- (83) a. $(\exists t) [t < \text{now} \ \& \ (\exists e) [\text{breaking } (e) \ \& \ \text{Subject } (e, \text{John}) \ \& \ \text{Object } (e, \text{the window}) \ \& \ \text{Hold } (e, t)]]$
 b. $(\exists t) [t < \text{now} \ \& \ (\exists e) [\text{breaking } (e) \ \& \ \text{Subject } (e, \text{John}) \ \& \ \text{Object } (e, \text{the window}) \ \& \ \text{Cul } (e, t)]]$

Notice that the only difference between (83a) and (83b) is that the former contains the relation ‘Hold’ and the latter the relation ‘Cul’(mination). ‘Hold’ and ‘Cul’ are relations between events and times: a breaking event may hold at a time (Hold (e,t)) or culminate at a time (Cul (e,t)). Given this, Parsons (1989: 223) claims that his analysis “is immune to the ‘paradoxes’ of the imperfective kind, since saying of an event that it holds at a given time does not imply that it culminates at that or any other time”.¹⁷²

To be sure, such an intuition-based assertion seems quite indisputable. However, we cannot ignore the (cross)linguistic facts. Typologically-oriented works (e.g., cf. Bybee et al (1994), Heine et al. (1991) or Heine (1994)) have clearly shown that the morphosyntactic analysis of the progressive (e.g., cf. (82a)) is much more complex than that corresponding to the non-progressive (e.g., cf. (82b)). Assuming the correctness of the functionalist claim that morphosyntactic complexity involves semantic complexity, the semantic representation of (82a) should be expected to be more complex than that of (82b), an *empirical* fact not captured by Parsons’s logical forms. By contrast, the present ‘extended argument structure’ analysis of the progressive accounts for that correlation put forward by functionalist linguists like Bybee or Heine: e.g., the non-progressive form in (82b) only involves merging a causative argument structure with TenseP_[past], whereas the progressive form in (82a) involves merging the very same causative argument structure into a locative unaccusative argument structure, that forming a complex argument structure, which

¹⁷² According to Parsons’s (1989: 222), “the difference between a progressive and non-progressive event sentence is, roughly, whether the sentence requires for its truth that the eventuality picked out by the verb culminates, or whether it only needs to ‘go on’ for a while. (...) Semantically, changing an event verb to the progressive form requires that it be treated as a state verb; this simply means that the sentence in question will require for its truth that the event in question *holds*, not that it *culminates*”.

is then merged with TenseP_[past]. To conclude, I take that point of contact with the functionalist perspective as a virtue of the present formal analysis of the progressive construction.¹⁷³ Indeed, the relevant moral to be drawn from this section is that formal semantic approaches to this construction should not continue neglecting the important results of the typological research by functionalist linguists any more.

2.4. Conclusions

In this chapter I have argued for the claim that the so-called 'Unaccusative Hypothesis' can be analyzed from Baker's (1997) and Mateu's (1997, 1999) radical view that there is a strong homomorphism between the syntax and semantics of unergative and unaccusative argument structure configurations.

In particular, here I have provided a relational syntactic and semantic analysis of two different case studies: aux-selection, a well-known 'unaccusative diagnostic', and the progressive construction. The reasons why I have singled out these two particular case studies are different: (i) On the one hand, I have chosen to analyze the aux-selection problem since it has allowed me to emphasize the importance of drawing the crucial distinction between non-syntactically transparent conceptual content and syntactically transparent semantic construal (Mateu & Amadas (2001)). My main goal has been to show the important role of the formally limited number of discrete relational semantic notions in the semantic determination of aux-selection. (ii) On the other hand, I have analyzed the progressive construction, since this case study has allowed me to test the theory presented in chapter 1 above with respect to 'extended argument structure constructions' (Mateu & Amadas (1999b)). I have argued that the progressive construction involves the extension of a lexical argument structure by means of superimposing an unaccusative structure that expresses the situation of a Figure in the middle of the lexical event, which is construed as a Ground via a nominalization process.

¹⁷³ Unfortunately, here I have not shown how the results of my present account of the progressive can be accommodated to those put forward by proponents of the so-called 'grammaticalization theory' (e.g., Heine (1994)). I leave it for future research. Following Bolinger's (1971) arguments for considering "the *-ing* of the progressive as an adverbial nominal", I have argued that the progressive in English *still* involves an abstract Figure-Ground configuration over the thematic structure lexically assigned to the verb. It follows that the degree of gradual grammaticalization of this 'unaccusative layer' will be argued to be crucial when discussing the so-called *chain of grammaticalization* (Heine (1994: 280)).

Chapter 3. Conflation processes and the elasticity of verb meaning

Drawing heavily on Talmy's (1985, 1991, 2000) typological work on so-called 'conflation processes', in this chapter I put forward a relational syntactic and semantic account of the parameterized variation involved in the so-called 'elasticity of verb meaning' (Rappaport Hovav & Levin 1998)). In section 3.1 I present Talmy's well-known distinction between 'satellite-framed languages' and 'verb-framed languages'. I show that his descriptive insights concerning so-called 'lexicalization patterns' can be nicely explained within the present formal theory of argument structure. In particular, I provide a relational syntactic and semantic analysis of two constructions that are typical of satellite-framed languages like English or Dutch: complex telic path of motion constructions and complex resultative constructions. I also show why these are impossible in verb-framed languages like Catalan or Spanish. Finally, I deal with some apparent counterexamples to Talmy's typology. In section 3.2 I provide an explanation of why complex denominal verbs involving a conflation process of two different argument structures can be typically found more often in satellite-framed languages like German or Dutch, rather than in verb-framed languages like Spanish or Catalan. In section 3.3 I provide an explanation of why the so-called 'locative alternation' is typically more productive in satellite-framed languages rather than in verb-framed languages. Section 3.4 summarizes the main general conclusions.

3.1. Satellite-framed vs. verb-framed languages: A relational syntactic and semantic approach

In this section I show that Talmy's (1985, 1991, 2000) work on 'lexicalization patterns' is intimately related to the phenomenon referred to as "the elasticity of verb meaning" (cf. Rappaport Hovav & Levin (1998)). In striking contrast to some semanticocentric proposals, I will argue that the homomorphic conception of argument structure presented in chapter 1 above can deal with this phenomenon in a more adequate way, since not only do some semantic factors must be taken into account, but (morpho)syntactic ones will also be shown to be important when

explaining the relevant crosslinguistic differences between Germanic languages like English or German and Romance languages like Spanish or Catalan.

3.1.1. *Lexicalization patterns and the elasticity of verb meaning*

According to Talmy (1985), languages can be classified as to how semantic components like Figure, Motion, Path, Manner, or Cause are conflated into the verb. For example, the 'lexicalization pattern' typically found in Romance languages like Spanish involves conflation of Motion with Path (see the data in (1)), whereas the 'lexicalization pattern' typically found in Germanic languages like English involves conflation of Motion with Manner (see the data in (2)).¹⁷⁴

(1) Lexicalization pattern: Conflation of Motion with Path

- a. La botella entró en/a¹⁷⁵ la cueva flotando. (Spanish)
the bottle went+into loc.prep the cave floating
- b. La botella salió de la cueva flotando.
the bottle went+out of the cave floating
- c. El globo subió por la chimenea flotando.
the balloon went+up through the chimney floating
- d. El globo bajó por la chimenea flotando.
the balloon went+down through the chimney floating
- e. La botella se alejó de la orilla flotando.
the bottle went+away from the bank floating

(2) Lexicalization pattern: Conflation of Motion with Manner

- a. The bottle floated into the cave.
- b. The bottle floated out of the cave.
- c. The balloon floated up the chimney.
- d. The balloon floated down the chimney.
- e. The bottle floated away from the bank. Talmy (1985: 69f)

¹⁷⁴ One caveat is in order here concerning apparent counterexamples: as pointed out by Talmy (1985), the existence in English of Path verbs like *enter*, *exit*, *ascend*, *descend*, etc., is due to Romance influence. Accordingly, these examples fall out of the scope of the Germanic lexicalization pattern, the one in (2).

As argued by Talmy (1991), Spanish and English can be regarded as two poles of a typological dichotomy that he characterized as ‘verb-framed languages’ *versus* ‘satellite-framed languages’. Given this distinction, there are languages encoding the Path into the verb: for example, consider the Spanish Path verbs *entrar* ‘go in(to)’, *salir* ‘go out’, *subir* ‘go up’, etc. By contrast, other languages do not conflate the Path into the verb but leave it as a satellite around the verb. According to Talmy, the latter option is typically found in the majority of Indo-European languages (Romance being excluded).

As will be made clear below, the appropriate way of dealing with the data in (2) is as follows: the Manner component (e.g., *floating* in the examples in (2)) is allowed to be conflated into the motion verb *since* the Path element remains as a satellite.

Quite interestingly, the lexicalization pattern in (2) is to be related to the well-known elasticity of the verb meaning in English (cf. Rappaport Hovav & Levin (1998)): e.g., see the examples in (3)-(4). Since the Path component remains as a satellite in English, the Manner component (e.g., *wiping* or *running*) is then allowed to be conflated into the verb in (3)-(4). By contrast, the lexicalization pattern corresponding to Spanish in (1) (i.e., the Path is conflated into the verb, saturating it lexically) prevents this language from having the kind of verbal elasticity shown in those complex resultative-like constructions in (3c-f)-(4c-f). In Spanish the Manner component is forced to be expressed as an adjunct if necessary: e.g., (3d) could be translated to Spanish as *Terry quitó las migas de la mesa fregándola* (lit.: ‘Terry took+out the crumbs from the table wiping it’).¹⁷⁶

- (3) Verbs of surface contact like *wipe*
- | | | |
|----|---------------------------------------|------------|
| a. | Terry wiped. | (activity) |
| b. | Terry wiped the table. | (activity) |
| c. | Terry wiped the crumbs into the sink. | (putting) |

¹⁷⁵ *En*: Peninsular Spanish; *a*: American Spanish.

¹⁷⁶ As noted by Talmy, the Manner adjunct is often omitted in Spanish since the result of such a direct translation can be quite awkward (as it is the case in the present translation of (3d)). Such an observation has been empirically tested by Slobin (1996b), who shows that Spanish translators often omit the Manner component when translating from English to Spanish.

- d. Terry wiped the crumbs off the table. (removing)
- e. Terry wiped the slate clean. (change of state)
- f. Terry wiped the crumbs into a pile (creation)

(4) Verbs of manner of motion like *run*

- a. Pat ran (atelic/unergative)
- b. Pat ran to the beach (telic/unaccusative)
- c. Pat ran herself ragged.
- d. Pat ran her shoes to shreds.
- e. Pat ran clear of the falling rocks.
- f. The coach ran the athletes around the track

Rappaport Hovav & Levin (1998: 98-99; exs. (3)-(4))

3.1.2. *Semantic approaches to complex resultative constructions*

There is a considerable number of semantic proposals that try to account for the generation of those resultative-like constructions that can be typically found in satellite-framed languages like English or German (e.g., cf. (3c-f) or (4c-f)). Next I will review some of these proposals since I want to show that the relevant *explanation* of the crosslinguistic variation concerning the elasticity of verb meaning has nothing to do with the positive (English) or negative (Spanish) application of some *ad hoc* operations over the Lexical Conceptual Structure (Levin & Rapoport (1988); Spencer & Zaretskaya (1998)), the Aspectual Structure (Tenny (1994)), or the Event Structure (Pustejovsky (1991); van Hout (1996)), but it will be shown to have to do with one empirical fact: namely, the morphosyntactic properties associated to the relevant directional relation are not the same in a satellite-framed language like English as in a verb-framed language like Spanish (cf. section 3.1.3 *infra* for more details). Therefore, I will take pains to show that there is no *principled* way to account for the differences between English and Spanish in terms of *purely* semantic and/or aspectual operations available in the former language, but not in the latter.

To start with, let me briefly comment on Levin & Rapoport's (1988) 'Lexical Subordination' operation in (5b),¹⁷⁷ a more sophisticated account being also found in

¹⁷⁷ See also Spencer & Zaretskaya (1998) for an application of Levin & Rapoport's LCS analysis of lexical subordination to verb prefixation in Russian (cf. section 3.2.3 *infra*).

Jackendoff (1990). 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 (5b)).

- (5) a. The dog barked.
 [x ACT _[BARKING]]
 b. The dog barked the chickens awake.
 [x CAUSE [y BECOME (AT) z] BY [x ACT _[BARKING]]]

Given this, I would like to call attention to a non-trivial problem of Levin & Rapoport's LCS analysis. As it stands, it is not clear at all *why* the lexical subordination operation in (5b) exists in English but not in Romance: their simply saying that the lexical subordination rule does not apply to Romance can *not* be regarded as an explanation, but as a mere stipulation.

Basically, the same criticism can also be applied to non-syntactic approaches to Lexical Subordination like Tenny's (1994: 200) aspectual analysis, which is quoted in (6), and exemplified in (7).

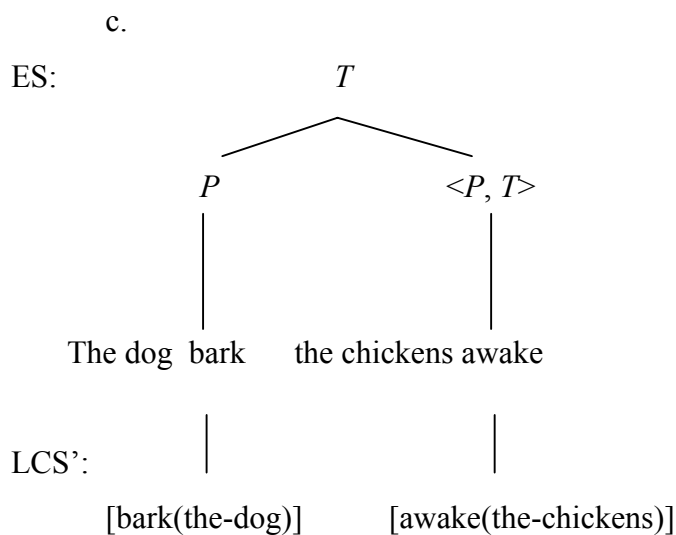
- (6) “*Lexical subordination is actually an operation over aspectual structure* (<emphasis added: JM>). It is an aspectual operation in which the MEASURE aspectual role is added to an empty aspectual grid (...) Taking the simple basic meaning of the verb and extending its sense by importing a result component into the verb's meaning amounts to an operation over aspectual structure”.

- (7) a. The dog barked.
 bark₁: Aspectual structure: []
 b. The dog barked the chickens awake.
 bark₂: Aspectual structure: [MEASURE]
 c. bark₁ → bark₂
 Aspectual structure: [] → [MEASURE]

In Tenny's aspectual approach it is simply assumed that there are languages like Romance which do not make use of the aspectual operation informally depicted in (7c). Unfortunately, a more explanatory account on the basis of which this assumption is made is not pursued by Tenny.

Similarly, the same problem found in Tenny's aspectual approach arises when Pustejovsky's (1991) 'Event Type-Shifting' analysis is taken into account: e.g., cf. (8c). For example, he points out that the resultative construction (e.g., cf. (8b)) is not but an instantiation of a productive strategy of converting '*P*rocesses' (i.e., activities) into '*T*ransitions' (i.e., accomplishments).

- (8) a. The dog barked (bark → process)
 b. The dog barked the chickens awake (bark → transition)



LCS:

cause(act(the-dog), become ([awake(the-chickens)]) BY bark)

Pustejovsky's analysis is not free of problems either. Once again the immediate question that arises from a crosslinguistic perspective is why some languages (e.g., Romance) do not make use of this event type-shift strategy (cf. Mateu & Rigau (2000)).

My main criticism to the semantic and/or aspectual approaches reviewed above can be summarized as follows: Why is it the case that ‘Lexical Subordination’ or ‘Event Type-Shifting’ are semantic/aspectual operations available in the lexicon of English, but not in that of Romance? I am fully convinced that such a question cannot be answered in any serious way precisely because its very formulation is clearly inappropriate as well. To be sure, I agree with their claiming that the *raison d’être* of this crosslinguistic difference is to be found in the lexicon. Otherwise, where could it be found? This notwithstanding, I think that the above-mentioned proposals have missed the point when dealing with both the specific nature of the Lexical Subordination rule and its range of operation.

Quite crucially, I will show that both the Lexical Subordination rule and its range of operation must be defined within the relational domain of the argument structures argued for in chapter 1 above. Moreover, notice that in the generative paradigm it is widely acknowledged that parametric variation cannot be defined in *purely* semantic or aspectual terms. This said, let me then advance the relevant conclusion: indeed, semantic and/or aspectual notions similar to those argued for by Levin & Rapoport, Tenny or Pustejovsky can be said to play a role when describing the syntactically relevant aspects of meaning associated to those constructions involving the lexicalization pattern in (2). This notwithstanding, morphosyntax will be argued to play a crucial role in the present explanation of the relevant crosslinguistic differences commented on above. In this sense the present proposal can be regarded as similar in spirit to those found in Snyder (1995a,b; 2001), Klipple (1997), Mateu & Rigau (1999, 2002) or Mendivil (2002).

To conclude this section, it should then be clear that proponents of approaches like those reviewed above cannot explain why argument structure constructions like *John danced into the room* or *The dog barked the chickens awake* do exist in some languages (e.g., in English or German) but do not in others (e.g., in Catalan or Spanish). They often limit themselves to stating this as a fact: e.g., the following statement in (9) can be taken as representative of adopting such a position.

- (9) “Not all languages can conflate (118) <i.e., [BECOME (x, [LOC (y)]), BY [RUN (x)]]: JM> into a single verb name, of course. For those such as the Romance languages the two components have to be separated in the syntax.

The core predication is the LCS for a general verb of directed motion such as *enter*. Thus the realization of (118) <cf. *supra*: JM> in Romance will look something like *She entered the room running*'.

Spencer & Zarestakya (1998: 33)

Notice that no explanation is pursued concerning *why* it is the case that in Romance languages “the two components” involved in a complex telic Path of motion construction like *She ran into the room*, have to be obligatorily separated in the syntax. Why doesn't such a restriction hold for English? In the following section I will argue that such a non-trivial question can be answered in quite an adequate way within the present framework, where both semantic *and* (morpho)syntactic aspects of argument structure are taken into account.

3.1.3. Conflation processes in complex telic Path of motion constructions and resultative constructions: A relational syntactic and semantic account

In this section I will provide a principled account of the crosslinguistic variation that emerges from the different setting of those two lexicalizations patterns commented on in section 3.1.1.¹⁷⁸

The crosslinguistic variation involved in complex argument structure constructions like *John danced into the room* or *The dog barked the chickens awake* has also been studied by Snyder (1995a), among others. For example, Snyder's (1995a) main proposal is based on the claim that English differs from Romance in permitting a phonologically null aspectual morpheme.

(10) “(...) in a language such as French or Spanish, however, in which the \emptyset_{telic} morpheme is unavailable, the addition of a secondary 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”.

Snyder (1995a: 463-464)

¹⁷⁸ Other recent generative approaches to Talmy's (1985, 1991) conflation processes are the following ones: for a relational semantic account (Mateu (1997)), see Mateu & Amadas (1999a); for a minimalist account (Chomsky (1995f)), see Mateu & Rigau (2002); for a lexical syntactic account (Hale & Keyser (1993f)), see Mateu (2000b, 2001c). Needless to say, the present relational syntactic and semantic account largely benefits from the main insights to be found in all these three approaches.

In contrast, the present 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 me 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, I will show that Pustejovsky’s (1991) or Snyder’s (1995a) intuition-based observation that a process VP is “converted” into an accomplishment VP by the “addition” of a resultative-like predicate cannot receive an adequate explanation within the perspective adopted here. Rather I 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 telic PP/AP phrase, but the process verb.

As noted, I want to argue that the explanation of the lack in Romance of complex argument structure constructions like those in (11a,c) must be sought in Talmy’s (1985, 1991) insights on those lexicalization patterns described in section 3.1.1. Firstly, I will provide an explanation of why Romance typically lacks complex telic Path of motion constructions like the one exemplified in (11a). Secondly, I will show that a similar explanation can be argued to hold for its lacking complex resultative constructions like the one exemplified in (11c).

- (11) a. The boy danced into the room.
 b. El noi entrà a l’habitació ballant. (Catalan)
 The boy went-into loc.prep the room dancing
 c. The dog barked the chickens awake.
 d. El gos despertà els pollastres bordant (Catalan)
 The dog awoke the chickens barking

To put it in Talmy’s (1985) terms, (11a) involves conflation of Motion with Manner, or alternatively, in Talmy’s (1991) terms, (11a) involves conflation of MOVE with SUPPORTING[EVENT]. By contrast, the corresponding counterpart of (11a) in a verb-framed language like Catalan (cf. (11b)) involves a different lexicalization pattern: i.e., conflation of Motion with Path, the Manner component being expressed as an adjunct.

The main proposal I will entertain here is that the parameterization of the conflation processes involved in the argument structures in (11a-b) is sensitive to the nature of the morphosyntactic properties associated to the birelational element expressing a telic Path (cf. my [+r]). As noted above, in Romance (e.g., Catalan), it is usually the case that the Path component is conflated into the eventive relation: such a conflation is to be related to the verb-framed nature of Catalan.¹⁷⁹ In contrast, in English the Path relation is not conflated into the verb but is left "stranded": hence its satellite-framed nature.

As noted by Mateu & Rigau (2002), the fact that the conflation process of Motion and Path in Romance is a fossilized process has important consequences. Given this, the morphosyntactic features corresponding to the complex head formed by *V* (i.e., the morphosyntactic realization of the transitional eventive relation) plus *P* (i.e., the morphosyntactic realization of the directional relation) cannot be distinguished any longer. That is to say, the Catalan verbal forms in (12) are to be regarded as atoms as far as their morphophonological status is concerned: i.e., which morphophonological properties correspond to the motion verb and which ones to the directional preposition/particle cannot be distinguished (synchronically speaking). Crucially, the most important consequence of such a lexical saturation is that this fossilized lexicalization prevents Catalan from conflating Motion with Manner.

(12) Path verbs in a verb-framed language like Catalan:

entrar 'to go into', *sortir* 'to go out', *pujar* 'to go up', *baixar* 'to go down',
allunyar-se 'to go away', *tornar* 'to go back', etc.

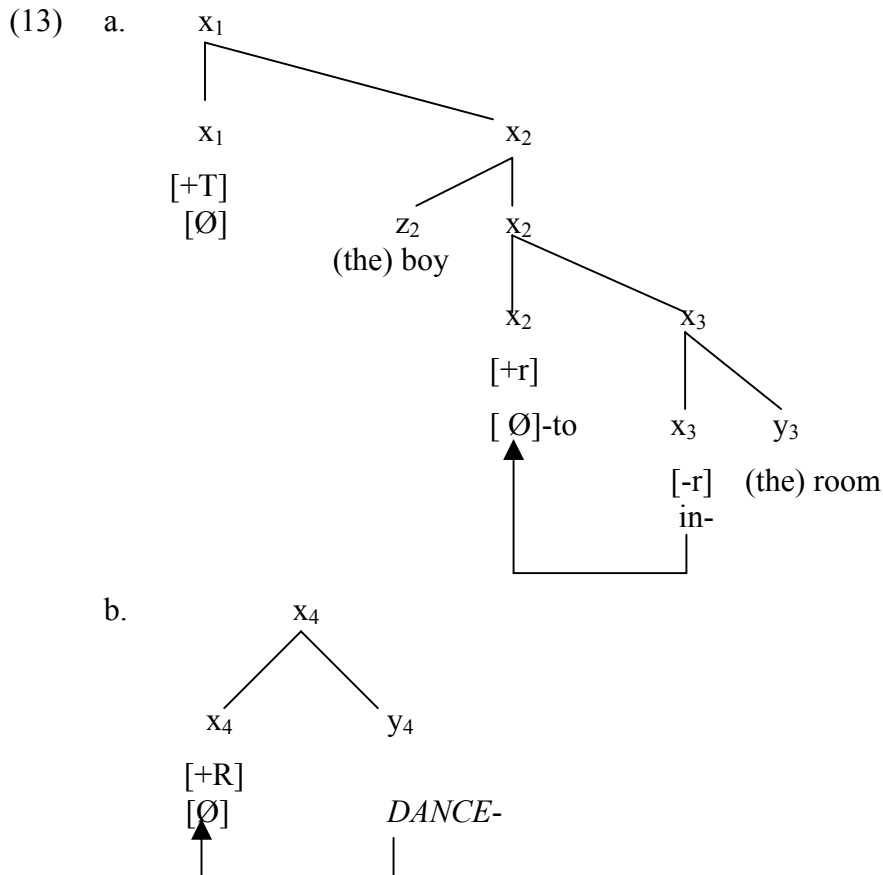
By contrast, in satellite-framed languages like English the directional preposition/particle is not typically conflated into the verb. Unless the eventive head

¹⁷⁹ Aske (1989), in an important qualification to Talmy's (1985) typology, pointed out that there are two types of Path phrases that must be distinguished (cf. also Slobin (1996b) and Mora (2001)):

- (i) a. A *one-dimensional locative path phrase* adds the "location" (i.e., the path or one dimensional region) in which the activity took place.
- b. A *telic path phrase* predicates an end-of-path location/state of the Figure.
- Both types in (i) are possible in English, but only the former type is possible in Romance.
- (ii) a. The boy danced along the tunnel.
- b. The boy danced {into the tunnel/out of the tunnel}

Quite interestingly, Aske's insight can be provided with a structural basis within the present framework: the 'telic path' *into the tunnel* in (iib) occupy a complement position inside the basic argument structure (cf. (13a) below), whereas the 'atelic path' *along the tunnel* in (iia) is to be considered as an adjunct to the basic argument structure. Accordingly, (iia) is an unergative construction, while (iib) is an unaccusative one (cf. Hoekstra (1984), among others).

of the unaccusative argument structure structure in (13a) has phonological content (e.g., *The boy {went/got} into the room*), an independently generated argument structure object with full phonological content (e.g., cf. the unergative one in (13b)) is then required to be conflated into the non-saturated eventive head of (13a).¹⁸⁰



Being inspired by an insight from Hale & Keyser (1997a: 228-229), I argue that the formation of the complex argument structure of (11a) *The boy danced into the room* involves a 'generalized transformation': basically, this kind of syntactic operation can be argued to take two different structures and fuse them into only one.¹⁸¹ Accordingly, the resulting complex argument structure in (14) can be

¹⁸⁰ Such a requirement could be argued to be related to Hale & Keyser's (1998) external condition of avoiding phonologically empty matrices at PF.

On the other hand, for expository reasons, the full derivational argument structure analysis of the complex spatial relation *into* has been simplified here: see section 3.3.3 for more details; see also Hale & Keyser (1997c, 2000c).

¹⁸¹ Quite interestingly, note that the generalized transformation operation is easily explained under Chomsky's (1995f) minimalist assumptions: Grammar appears to be organized in such a way that the computational system allows different 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 (2002)).

analyzed as involving a syntactic operation that takes the unergative structure in (13b) and conflates it into the unaccusative one in (13a).¹⁸² In (14) such an operation has been depicted as being carried out via an adjunction process. As noted, the conflation appears to be motivated by the external reason that phonologically null matrices must be eliminated at PF. Given this, the phonological content associated to (13b) is transferred to the empty matrix of the eventive head in (13a).¹⁸³

¹⁸² Recall that 'Conflation' is to be seen as concomitant of 'Merge' (cf. Hale & Keyser (1998, 1999a, 2000a).

¹⁸³ See Silió & Cristóbal (2002) for an alternative lexical-syntactic analysis. See also Ritter & Rosen (1998) for relevant discussion concerning the syntax of delimited events like those involved in (11a) and (11c). Unfortunately, for reasons of space, I cannot review their interesting proposals here.

See McIntyre (2002) for an elaboration of the semantic conditions on the conflation process sketched out in Mateu (2001a). Quite courteously, he points out that "Mateu's (2001) proposal inspired my theory of m-conflation (...) The differences between my proposal and Mateu's are that I assume that Mateu's separate derivational workspaces correspond to the distinction between morphology and syntax, and that conflation is constrained by the semantic condition in (52) <(i.e., (i): JM)>" (p. 17):

- (i) M(orphological)-conflation: Affix a root R to INIT or to CHANGE if R names an event which is identical to the initiation or change expressed by those heads.
McIntyre (2002: 15)).

Concerning his VP structure in (ii), McIntyre points out that "CHANGE and INIT are *relational* <his emphasis: JM> in that they force a predication relationship between their complement and specifier" (p. 13) (see Mateu (1997, 1999) for a similar proposal).

- (ii) [_{InitP} <initiator> [_{Init} INIT [_{ChangeP} <direct object> [_{Change} CHANGE <secondary predicate>]]]]

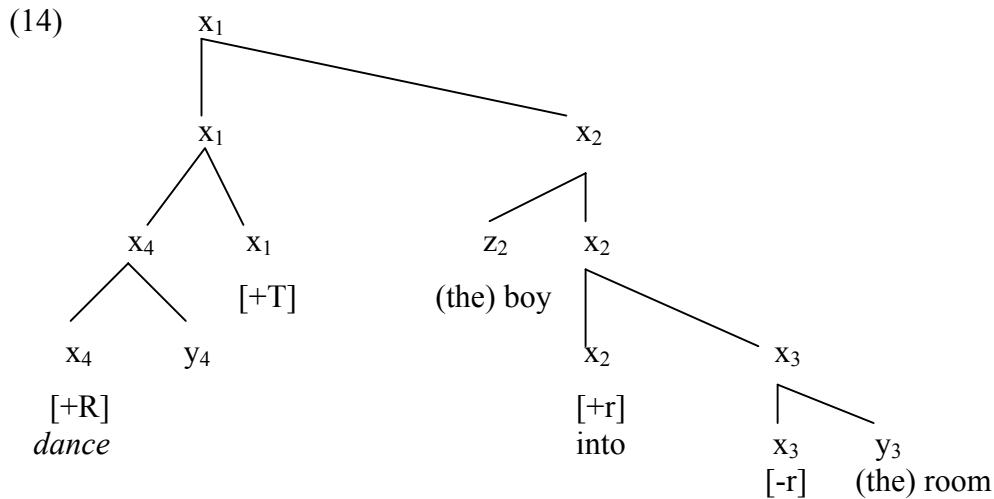
Two relevant examples of his M-conflation operation are depicted in (iiic) and (ivc):

- (iii) a. Ethel danced herself sore.
b. DO (ETHEL, DANCE) & _{CAUSE}BECOME (SORE (ETHEL)) (CS)
c. [_{InitP} [_{DP} Ethel] [_{Init} dance+INIT [_{ChangeP} [_{DP} herself] [_{Change} CHANGE [_{AP} sore]]]]](SS)
- (iv) a. Ethel danced into the theatre.
b. DO (ETHEL, DANCE) & _{CONTEMP} GO (ETHEL, [_{Path} TO IN THE THEATRE)) (CS)
c. [_{ChangeP} [_{DP} Ethel] [_{Change} dance+CHANGE [_{PP} into the theatre]]]]
McIntyre (2002: 15-16: exs. (51, 53))

Quite interestingly, the analyses in (iiic) and (ivc) are in fact very similar to those put forward by Mateu & Amadas (1999a). The relevant correlations are those depicted in (v):

- (v) a. [_{R1} [_XEthel] [_{R1} [_{R2}DO+dance]+CAUSE] [_T BECOME [_r [_X herself] [_r sore]]]
b. [_T [_T [_RDO+dance]+GO] [_r [_X Ethel] [_r to [_r in [_X theatre]]]]

Basically, I abandoned the relational semantic analysis in (va) for the following reason: I was unable to find *empirical* motivation for positing a null transitional head in (va) (i.e., cf. McIntyre's CHANGE). To be sure, the analysis in (va) is quite intuitive (e.g., (va) is nicely paraphrased as "Ethel caused herself to become sore dancing"). However, as noted above, Harley convinced me of the problems inherent in my previous (otherwise standard) positing two event positions in the causative/transitive argument structure (cf. Harley (1995, 2002); cf. also my chapter 1 above).



As noted, the relevant conflation process depicted in (14) is not available in Romance since the lexical saturation of the phonological matrix of the transitional eventive head by the Path element x_2 (cf. (12)) prevents this main unaccusative head from being conflated with a subordinate eventive head from an independent argument structure (e.g., an unergative one similar to that of (13b): [x_4 x_4 [+R][Ø] [y_4 *ball-*])).

This said, it is now clear why Pustejovsky's (1991) or Snyder's (1995a) intuition-based observation that a process VP (e.g., *dance*) can be converted into an accomplishment VP by "adding" a telic 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 into the main unaccusative structure. To put it clearly, it is the process verb *dance*, but not the telic directional phrase *into the room*, that must be regarded as the "added" element.¹⁸⁴

Concerning the semantic interpretation to be drawn from (14), it is worth noting that the analysis depicted in (14) explains why the activity component (cf. my [+R]) associated to the verb *dance* in (11a) *The boy danced into the room* is not the foregrounded one: this component is subordinated to the transitional one (cf. my [+T]), which is associated to the main unaccusative eventive head. That is to say, not only can my analysis explain the syntactic facts (i.e., (11a) is an unaccusative

¹⁸⁴ To a certain extent, the present analysis could be taken to be in tune with Goldberg's (1995) constructional approach in the sense that it is the verbal meaning of '*dancing*' that turns out to be 'integrated' (to use her words) into the constructional meaning of the motion event. Accordingly, the *integrated* or *added* element is not the directional PP, but the verb expressing an activity.

construction (cf. Hoesktra (1984), among others), but the semantic ones are also explained: i.e., in (11a) the change component is foregrounded, the activity one being backgrounded.

Next I want to argue that the use of generalized transformations when constructing complex argument structures is not to be seen as a special strategy that allows us to explain how complex telic Path of motion constructions like *The boy danced into the room* or *The truck rumbled into the yard* are to be formed. In particular, here I want to show that the present analysis can also be argued to be extended to complex resultative constructions like (11c) *The dog barked the chickens awake*. Following Goldberg (1995), I will also assume that AP-based resultatives like (11c) involve a 'result-goal', that is, in our present terms, an abstract terminal coincidence relation. Given this, note that it should be desirable to appeal to the same reason when explaining both the ungrammaticality of the Catalan examples in (15) and (16).¹⁸⁵

- (15) a. *El noi va ballar a dins de l'habitació. (Catalan)
 the boy danced into of the room
 b. *El públic va riure l'espectacle fora de la ciutat.
 the audience laughed the show out of the town
 c. *En Joan va xutar la pilota a dins del bany.
 the John kicked the ball inside of-the bathroom
 a'. The boy danced into the room.
 b'. The audience laughed the show out of the town.
 c'. John kicked the ball into the bathroom.

- (16) a. *El gos va bordar els pollastres desperts (Catalan)
 the dog barked the chickens awake
 b. *La Paquita va fregar la taula neta.
 the Paquita wiped the table clean

¹⁸⁵ The examples in (15) are grammatical on the irrelevant non-directional (i.e., locative) reading: e.g., 'John was dancing at a fixed location (i.e., in the room)'. Similarly, the examples in (16b,c) are grammatical on the irrelevant attributive reading: e.g., *la taula neta*, 'the clean table'.

- c. *La Paquita va empènyer la porta oberta.
 the Paquita pushed the door open
- a'. The dog barked the chickens awake
- b'. Paquita wiped the table clean.
- c'. Paquita pushed the door open.

If the present parallelism between directional PPs and APs is to be maintained, the prediction is that complex resultative constructions involving conflation of two different argument structures are present in English, but are lacking in Romance. If my analysis is on the right track, the ungrammaticality of the Catalan examples in (16) is to be explained as follows: it is the case that the directional/Path element corresponding to an abstract terminal coincidence relation (cf. my [+r]) is lexically conflated into the verb in Romance. In other words, its verb-framed nature involves obligatory conflation of this birelational directional element into the eventive relation. As a result, the conflation of this saturated eventive head with lexical material from another independent argument structure turns out to be excluded.

This accepted, adjectives in Romance can not be said to contain a directional/Path relation.¹⁸⁶ Concerning the existence of so-called pure (i.e., non-complex) resultatives in Romance, it seems then plausible to assume that the adjectival phrases in (17) (cf. *oberta* and *rosa*) both correspond to an abstract Place, which is in turn the result of conflating a non-relational element (i.e., an abstract Ground) into a central coincidence relation (cf. my [-r]).¹⁸⁷ Crucially, in accordance with the verb-framed nature of Romance, the telic Path relation (cf. my [+r]) is conflated into the verb: cf. (17a'-17b').¹⁸⁸

¹⁸⁶ See section 3.1.4. below for so-called 'adverbial'/false resultatives like *La Paquita va tallar la carn fina / a talls fins* ('Paquita cut the meat thin/in(to) thin slices').

¹⁸⁷ Recall that 'adjectives' are not provided with primitive status in the present theory of argument structure; rather they are to be regarded as the derivational result of conflating a non-relational element into a non-eventive relation (cf. chapter 1 above).

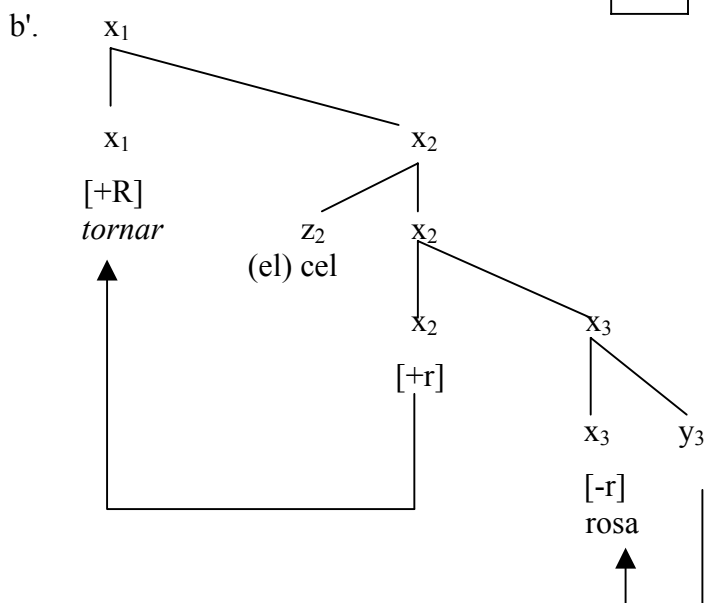
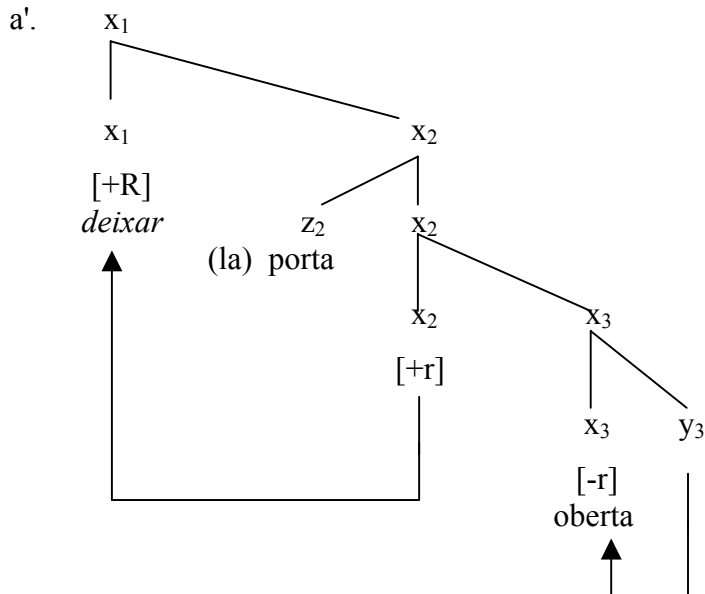
¹⁸⁸ Recall that we assume that the external argument in (17a) (i.e., *la Paquita*) and (17b) (i.e., PRO: cf. Mendikoetxea (2000)) is to be introduced by the relevant functional projection (be it Chomsky's (1995) *v* or Kratzer's (1996) *Voice Phrase*).

(17) a. La Paquita va deixar la porta oberta. (Catalan)

the Paquita cause+Path the door open

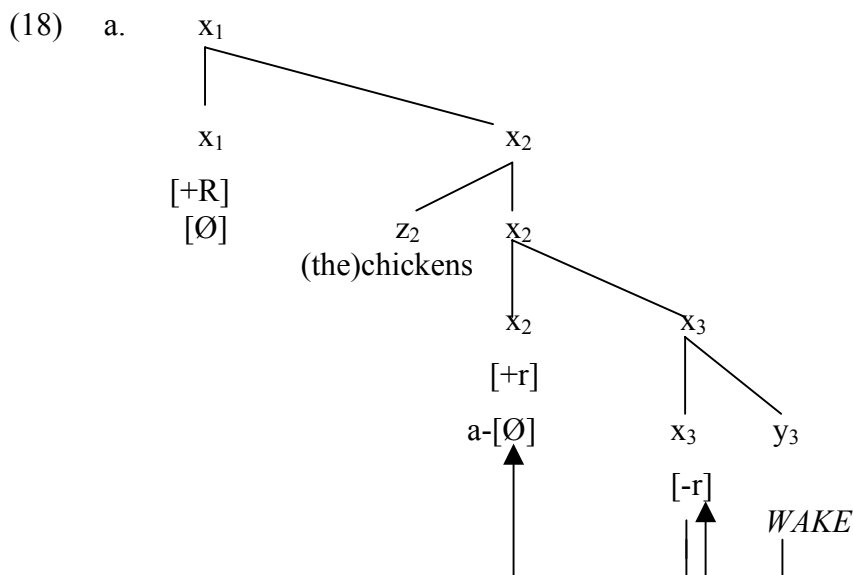
b. El cel es va tornar rosa.

the sky ES go+Path pink



On the other hand, the satellite-framed nature of English allows the entire abstract Path constituent involved in resultatives (e.g., *awake* in (16a')) to be left stranded. As a result, the phonologically null matrix of the transitive eventive head in (18a) must be saturated by a phonologically full matrix from an independent eventive head, e.g., that corresponding to the unergative one in (18b). Due to the satellite nature of the abstract terminal coincidence relation in (18a), the phonologically null matrix of the eventive head in (18a) must be saturated

externally: it is saturated by the phonological content provided by the eventive head in (18b). The conflation of the subordinate unergative head in (18b) into the main transitive head in (18a) is depicted in (19).^{189,190}



¹⁸⁹ See the previous footnote.

¹⁹⁰ It is important to note that the present analysis of resultatives is more in tune with Hoekstra's (1988, 1992) Small Clause (SC) approach, rather than with that adopted by Carrier and Randall (1992) or Levin & Rappaport Hovav (1995). The differences between these two competing approaches come to the fore when analyzing so-called 'transitive resultatives' like that in (ib):

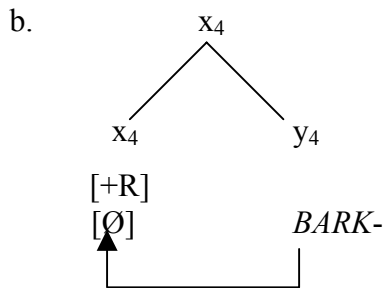
- (i) a. The dog barked the chickens awake (cf. *The dog barked the chickens).
- b. Paquita wiped the table clean (cf. Paquita wiped the table).
- c. Paquita wiped the crumbs off the table (cf. ≠Paquita wiped the crumbs).

Unlike Carrier and Randall (1992) and Levin & Rappaport Hovav (1995), Hoekstra (1988, 1992) claims that in (16b'=ib) the direct internal argument of the verb *wiped* is not *the table* but the SC [*the table clean*]. Accordingly, notice that Hoekstra posits the very same SC analysis for an 'unergative resultative' like (ia) as for a 'transitive resultative' like (ib) (cf. McIntyre (2002) for arguments for a similar analysis and Bowers (1997) for a different one).

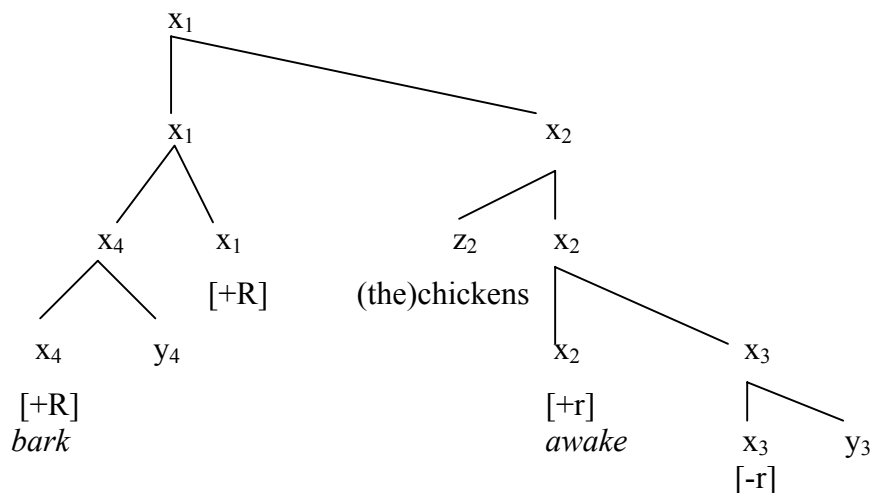
Crucially, it is important to realize that the present conflation analysis does not force me to claim that the verb *wipe* in (ib) directly subcategorizes for a SC. Rather what I am claiming is that it is an empty transitive verbal head selecting a SC-like complement that turns out to be conflated with the activity verb *wipe*. Moreover, notice that in the present framework, the SC amounts to the projection of an (abstract) terminal coincidence relation *X*, whose specifier is occupied by *the table* (see Mateu (2001c)).

To be sure, in (ib) what John was wiping was *the table*, but this mere observation should not force us to consider it as the direct internal argument of *wipe*. In fact, note that what John was wiping in (ic) was *the table* as well, this not implying that it is its direct internal argument. That is, it seems fully unnatural to postulate a syntactically-coded control relation in (ic) to account for this fact, this being left to be stated at a conceptual level.

Furthermore, some tests put forward by Carrier and Randall (1992) to identify direct internal arguments (the middle formation test, the adjectival passive test, and the nominalization test) have been argued to militate against a SC analysis of 'transitive resultatives' like (ib). However, these tests have been shown to be non-applicable in German, since in this language they can also hold for resultative constructions containing unergative verbs (see Wunderlich (1997b: 118); moreover, see Goldberg (1995) or Spencer & Zaretskaya (1998: 9f) for a rebuttal of these tests). For reasons of space, I will not review these complex issues here.



(19)



Next let us deal with some interesting predictions that can be drawn from the present approach to resultative-like constructions. Here I will concentrate on dealing with two of them: the first one has to do with the fact that there are no 'Path adjectives' in Romance, while the second one has to do with Rappaport Hovav & Levin's (1998) observation that the meaning of 'manner verbs' like *to wipe* is more "elastic" than the meaning of 'change of state verbs' like *to break*. Quite interestingly, I will explain why their observation can be typically tested with data from satellite-framed languages like English, but not with data from verb-framed languages like Catalan.

Note that an important generalization emerges from my crosslinguistic approach to resultatives: namely, in Romance there are no Path adjectives like those in (20), because the abstract terminal coincidence relation is conflated into the eventive head. Hence, it is no surprising at all that sentences like those in (20) are impossible in Romance. Recall that the conflation of the directional/Path element

into the eventive head in Romance excludes its conflation with an eventive head from an independent argument structure.

- (20) 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]

Levin & Rappaport Hovav (1996: 499)

My proposal is then that the sentences in (20) involve a conflation of unergative eventive heads such as *dance*, *swim*, *sprint*, *jump* into an abstract unaccusative eventive head expressing transition. Therefore, the same analysis of the relevant conflation process involved in (14) is valid for those sentences in (20): 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.

Let us now deal with the second relevant prediction alluded to above, that concerning the above-mentioned 'elasticity of verb meaning'. Since the important observation in (21) is originally to be found in Rappaport Hovav & Levin (1998), first I will briefly review their semantic account. Although their semantic analysis will be seen to describe the facts correctly, I will show why the approach pursued here can be regarded as more adequate to explain them.

- (21) "the impressive flexibility of manner verbs with respect to argument expression contrasts with the relative rigidity of result verbs."

Rappaport Hovav & Levin (1998: 103)

Rappaport Hovav & Levin (1998: 103) point out that manner verbs like *scrub* can readily appear with a wide range of 'non-subcategorized' objects, whereas result verbs like *break* cannot.¹⁹¹

¹⁹¹ According to Rappaport Hovav & Levin (1998: 102), "in (6a) <i.e., (22a): JM> *her fingers* is a nonsubcategorized object since it is not the surface that is being scrubbed. Although this sentence is

- (22) a. Cinderella scrubbed her fingers to the bone.
 b. *The clumsy child broke his knuckles to the bone.
 c. The child rubbed the tiredness out of his eyes.
 d. *The clumsy child broke the beauty out of the vase.

Rappaport Hovav & Levin (1998: 103; exs. (6)-(7))

Moreover, Rappaport Hovav & Levin (1998: 103) note that unlike verbs of surface contact like *sweep* or *wipe* (cf. (3) above), change of state verbs like *break* cannot be used as verbs of change of location nor as verbs of creation.

- (23) a. *Kelly broke the dishes off the table.
 (meaning: Kelly removed the dishes from the table by breaking the table)
 b. Kelly swept the leaves off the sidewalk.
 c. *Kelly broke the dishes into a pile.
 (meaning: Kelly broke the dishes and made a pile out of them)
 d. Kelly swept the leaves into a pile.

Rappaport Hovav & Levin (1998: 103; exs. (8)-(10))

Basically,¹⁹² Rappaport Hovav & Levin's (1998) account of their observation summarized in (21), which is exemplified by the contrasts in (22) and (23) above, relies on the fact that the *Template Augmentation* operation in (24) is said to apply to manner verbs like *scrub* (e.g., cf. (22a)), *rub* (e.g., cf. (22c)) or *sweep* (e.g., cf. (23b,d)), but not to change of state verbs like *break* (e.g., cf. (22b,d)-(23a,c)).

understood to describe the scrubbing of a surface, the surface itself is not mentioned. Thus, the sentence means that Cinderella scrubbed something, perhaps the floor, until her fingers were raw; however, (6b) <i.e., (22b): JM> cannot have a parallel interpretation: the child broke many things, and as a result of handling the broken things his knuckles were hurt".

For different analyses of so-called 'unselected object constructions', see also Goldberg (1995), Spencer & Zaretskaya (1998), McIntyre (2002) or Mateu (2001a), among others.

¹⁹² For reasons of space, my review of their lexical-semantic approach will be quite sketchy. So the reader should consult their 1998 paper to get a better perspective.

(24) *Template Augmentation*: Event structure templates may be freely augmented up to other possible templates in the basic inventory of event structure templates.¹⁹³

Rappaport Hovav & Levin (1998: 111; ex. (23))

According to them, manner verbs are associated to a simple event structure template (e.g., cf. (25a)). Hence the basic activity template in (25a) can freely "be augmented" to the derived complex accomplishment template in (25b/25b'). In contrast, externally caused change of state verbs are directly associated to a complex event structure template (cf. (25c)), so the operation in (24) never applies to them.

- (25) a. [x ACT <SWEEP> y]
 b. [[x ACT <SWEEP> y] CAUSE [BECOME [z <PLACE>]]]
 b.' [[x ACT <SWEEP> y] CAUSE [BECOME [z <STATE>]]]
 c. [[x ACT] CAUSE [BECOME [y <BROKEN>]]]

Moreover, Rappaport Hovav & Levin (1998) make an important distinction concerning 'structure participants' (e.g., cf. the variables *x* in (25), *z* in (25b,b'), and *y* in (25c)) vs. 'constant participants' (e.g., cf. the underlined variable *y* in (25a,b)). Only the former participants (i.e., the non-underlined ones) are argued to be obligatorily mapped to the syntax, as shown by the following examples taken from their work:¹⁹⁴

¹⁹³ According to Rappaport Hovav & Levin (1998: 107-108), the inventory of event structure templates includes those listed in (i) below, which are said to correspond roughly to the Vendler-Dowty aspectual classes of verbs.

- (i) a. [x ACT <MANNER>] (activity)
 b. [x <STATE>] (state)
 c. [BECOME [x <STATE>]] (achievement)
 d. [[x ACT <MANNER>]CAUSE [BECOME[y <STATE>]]](accomplishment)
 e. [x CAUSE [BECOME [y <STATE>]]] (accomplishment)

According to Rappaport Hovav & Levin (1998: 110), "a verb's lexical entry consists of the name contributed by the constant together with the meaning, represented as an event structure". While the set of event structure templates is fixed, the set of constants, which are depicted in italics in (i), is open-ended: e.g., instantiations of the constant <STATE> include <BROKEN>, <CLEAN>, <DRY>, etc.

¹⁹⁴ Rappaport Hovav & Levin's (1998: 112-113) account of the semantics-syntax mapping is based on the two following 'well-formedness conditions on syntactic realization':

- (i) *Subevent Identification Condition*: Each subevent in the event structure must be identified by a lexical head (e.g., a V, an A, or a P) in the syntax.
 (ii) *Argument Realization Condition*:
 a. There must be an argument XP in the syntax for each structure participant in the

- (26) a. Phil swept the floor. / Phil swept.
 b. Kelly swept the crumbs onto the floor. / *Kelly swept the crumbs. / *Phil swept onto the floor.
 b'. Phil swept the floor clean. / *Phil swept clean.
 c. Tracy broke the dishes. / *Tracy broke.

Hitherto my sketchy review of their lexical-semantic approach. As noted above, their approach can be said to describe the facts correctly, but some non-trivial questions arise when a crosslinguistic perspective is taken into account: concerning resultative formation, what could it mean that Template Augmentation is a semantic operation available in the lexicon of satellite-framed languages like English, Dutch or German, but unavailable in the lexicon of verb-framed languages like Catalan, Spanish or French?¹⁹⁵ Such a critical remark should not to be taken as a minor one: unless an explanation is given, it is not clear to me which is the relevant *empirical* evidence that favors Rappaport Hovav & Levin's (1998) semantic approach over those reviewed above in section 3.1.2, among others to be found in the literature.¹⁹⁶

This said, I want to argue that (morpho)syntax has an important role to play in *explaining* Rappaport Hovav & Levin's observation in (21) above. Accordingly, the relevant operation accounting for the crosslinguistic differences will be shown not to be taken as a purely semantic one, since parametric variation is assumed not to be explained in purely semantic or aspectual terms (cf. Mateu & Rigau (1999)). The present approach to argument structure constructions, which combines both semantic *and* (morpho)syntactic aspects of their formation, will be argued to explain the (cross)linguistic facts in a more natural way.

The starting point in my explanation of the facts reviewed above is to be found in Rappaport Hovav & Levin's important observation that activity verbs like *sweep*, but not change of state verbs like *break*, can be typically used intransitively (I

-
- b. event structure.
 Each argument XP in the syntax must be associated with an identified subevent in the event structure.

¹⁹⁵ In fact, this is the position taken by Fong & Poulin (1998). As noted, I have no qualms concerning their descriptive point. However, it is clear (to me, at least) that assuming such a position does not lead one to any explanatory insight.

¹⁹⁶ Cf. Jackendoff (1990), Goldberg (1995), Verspoor (1997), Wunderlich (1997a,b), Kaufmann & Wunderlich (1998), McIntyre (2002), Moreno Cabrera (2001), among others.

would prefer saying "unergatively"): cf. the relevant contrasts in (26a) vs. (26c). In the present terms, this means that only the former verbs can be associated to the unergative argument structure in (27a). Notice that the same holds for languages like Catalan, as shown by the contrast in (28).

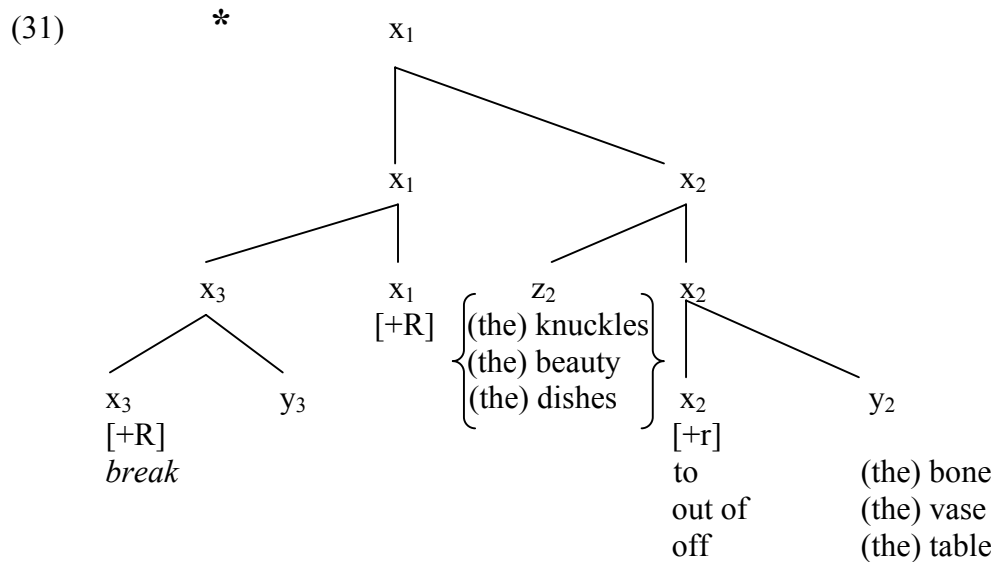
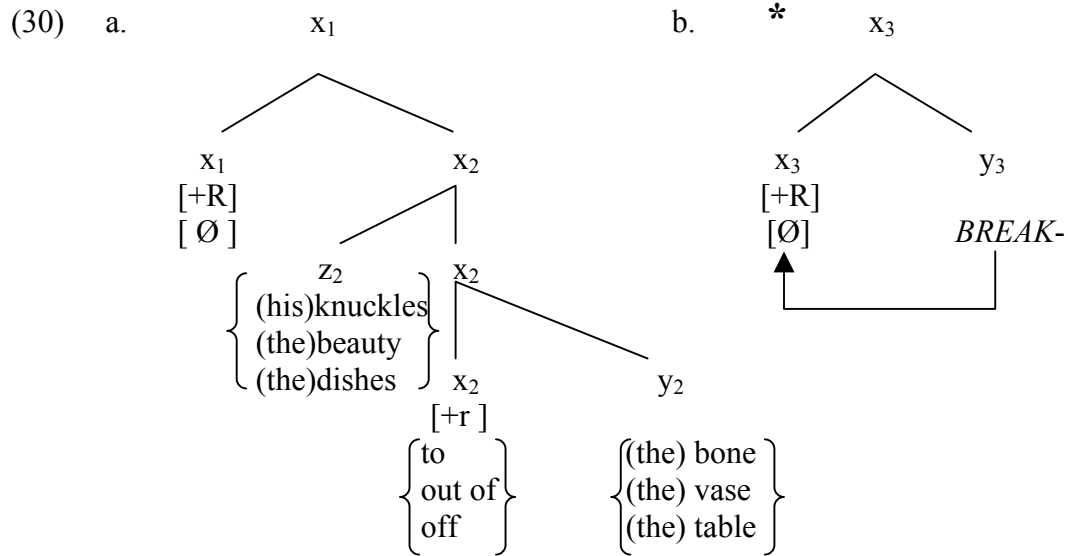
- (27) a. (z₁...) [X₁ [X₁[+R][Ø] y₁]]
 b. (z₁...) [X₁ [X₁[+R][Ø] *SWEEP*]] (meaning: (Phil) DO sweep)
 c. *(z₁...)[X₁ [X₁[+R][Ø] *BREAK*]] (meaning: (Terry) DO break)

- (28) a. En Joan no va escombrar ahir. (Catalan)
 the John not swept yesterday
 b. *En Joan no va trencar ahir.
 the John not broke yesterday

So far so good. Now: the morphosyntactic operation of conflation involving two different argument structures can *only* subordinate an unergative eventive head, but not a transitive or unaccusative one, to a main {transitive/unaccusative} eventive head: I will explain why this must be so when commenting on (32) below. For the time being, notice that the fact that change of state verbs like *break* cannot act as unergative verbs (cf. (26c)) explains why (22b,d) and (23a), repeated in (29) below, are ungrammatical. No further assumptions are needed to explain these examples. In short, the ungrammaticality of (30b) entails that of (31), since the latter contains the former.¹⁹⁷

- (29) a. *The clumsy child broke his knuckles to the bone. (=22b)
 b. *The clumsy child broke the beauty out of the vase. (=22d)
 c. *Kelly broke the dishes off the table. (=23a)
 (meaning: Kelly removed the dishes from the table by breaking the table)

¹⁹⁷ For expository reasons, the derivational argument structure analysis of the complex spatial relation involved in (30a) has been simplified here: see Hale & Keyser (1997c, 2000c) for more details.

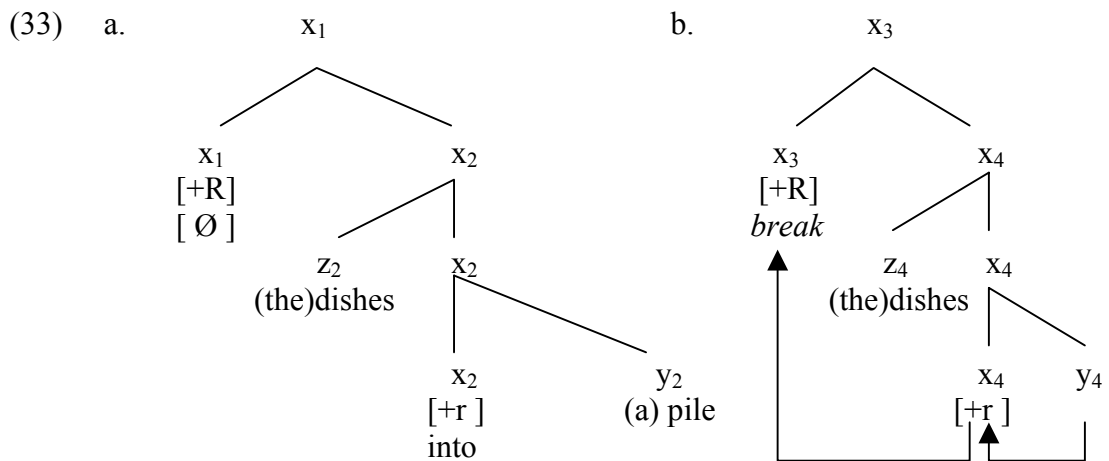


Next let us explain why a subordinate transitive argument structure cannot be conflated into a main argument structure: (23c), repeated in (32) below, would represent such a case.

- (32) *Kelly broke the dishes into a pile.
 (meaning: Kelly broke the dishes and made a pile out of them)

Notice that the ungrammaticality of (32) has to have a different structural source, since there is no problem with the individual derivations in (33a) and (32b). Both of them are legitimate: (33a) corresponds to a 'caused change of position' (cf.

(*Kelly*) put the dishes into a pile),¹⁹⁸ while (33b) corresponds to a 'caused change of state' (cf. (*Kelly*) broke the dishes).¹⁹⁹ I want then to argue that the complex argument structure associated to (32) is not well-formed, since the inner specifier of (33b) remains unlicensed: the successive conflation operation in (33b) does not affect the NP *the dishes*, this NP "being on the air". However, it is the case that the conflation operation always exhausts *all* the lexical material of the subordinate argument structure: that is, no residue is left behind. Notice that this is accomplished when the conflation operation affects an unergative argument structure: both the eventive head and its non-relational complement are affected by this operation (e.g., cf. (18b-19)).²⁰⁰



Accordingly, it seems to be the case that the relevant conflation process involved in resultative formation is only possible when the subordinate argument structure corresponds to the unergative type, the intransitivized (i.e., 'unergativized') use of transitive verbs included (cf. (34)). Otherwise the derivation crashes. As noted, such a conflation process (cf. (36)) is only possible in satellite-framed

¹⁹⁸ For expository reasons, the analysis of the complex spatial relation *into* has been simplified here: as shown above, *into* can be argued to contain a 'terminal coincidence relation' (i.e., *to*) plus a 'central coincidence relation' (i.e., *in*).

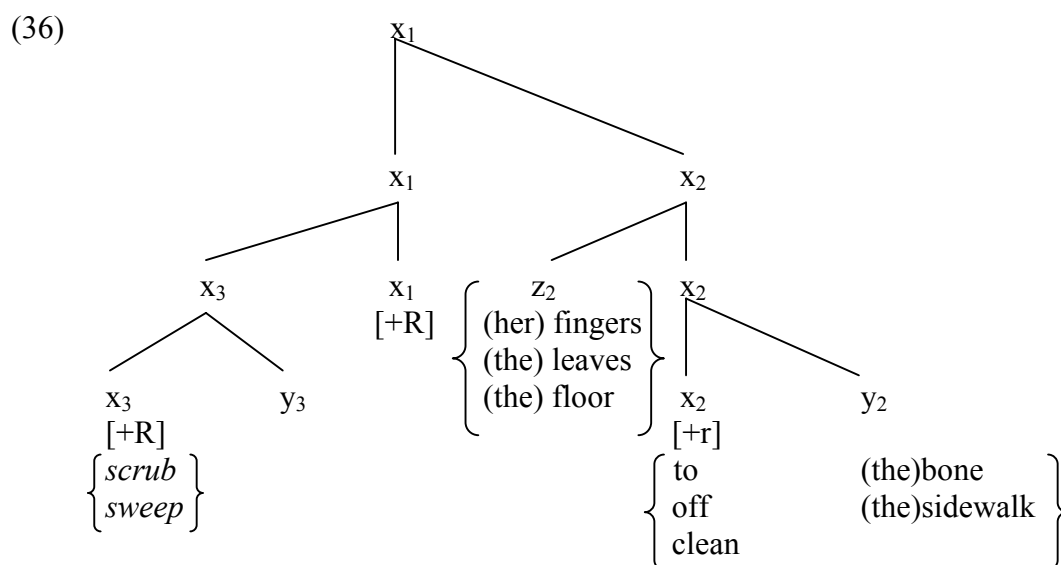
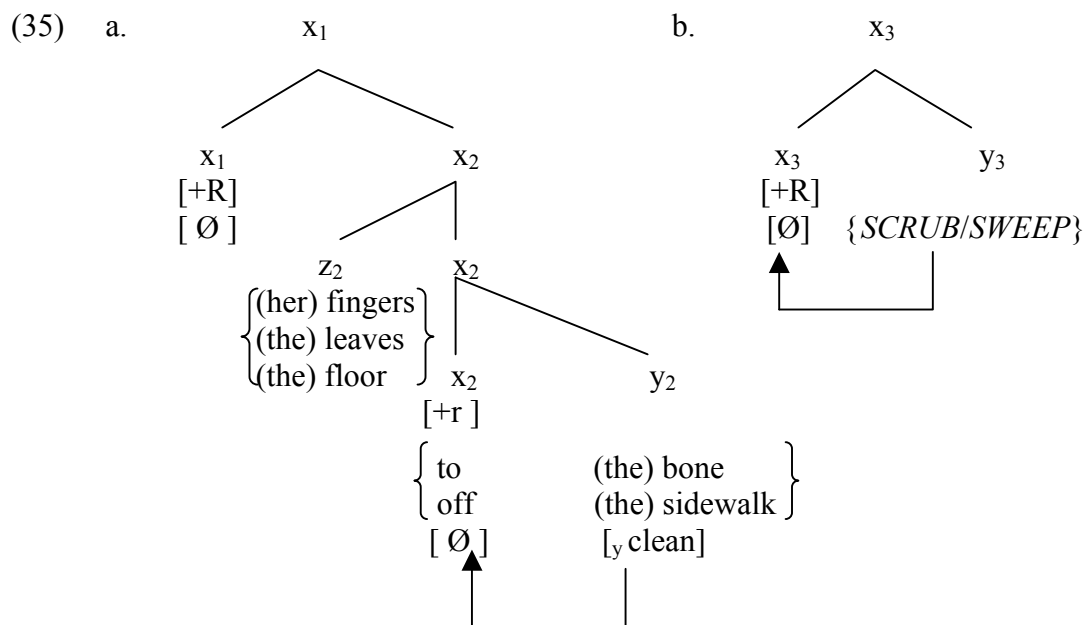
¹⁹⁹ Recall that we assume that the external argument (i.e., *Kelly*) is to be introduced by the relevant functional projection (cf. Chomsky (1995) or Kratzer (1996), i.a.).

²⁰⁰ A similar explanation will be shown to be relevant when accounting for the ungrammaticality of the following examples (cf. chapter 4 below): a subordinate unaccusative head cannot be conflated into a main transitive one.

- (i) *The river froze the fishes dead.
- (ii) *The ice melted the floor clean.
- (iii) *They arrived the floor dirty.

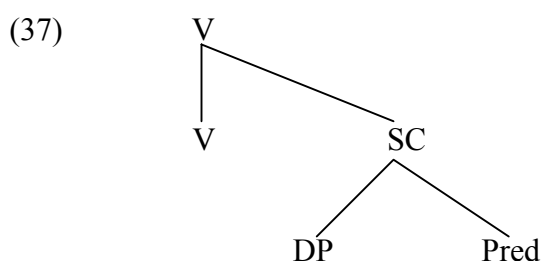
languages like English, but not in verb-framed languages like Spanish. As argued above, in the latter languages, the subordinate unergative head is not allowed to be conflated into the main head, since the directional/Path element has already been conflated into this eventive head: e.g., cf. Sp. *Kelly quitó las hojas de la acera {con una escoba/#barriendo}* 'Kelly took-out the leaves from the sidewalk {with a broom/sweeping}').

- (34) a. Cinderella scrubbed her fingers to the bone.
 b. Kelly swept the leaves off the sidewalk.
 c. Phil swept the floor clean.

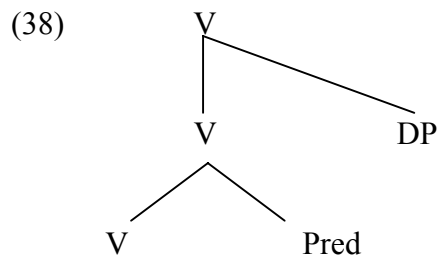


All in all, I have tried to argue that the present approach accounts for the relevant data in a more appropriate way than "pure" semantic approaches do. In particular, I have shown that morphosyntax has an important role to play when explaining the crosslinguistic variation involved in resultative formation processes. Of course, such an assertion should not lead one to conclude that semantics is not relevant when dealing with resultative formation processes, an absurd claim, to be sure. Moreover, I have argued that my (syntactically transparent) semantic analysis is more adequate than Pustejovsky's (1991): properly speaking, resultatives are not to be regarded as involving an event type-shifting from 'processes' to 'transitions' any longer (cf. Mateu & Rigau (2000)). Was I forced to express it in similar terms to his, I would rather claim that there is a basic (main) transition which turns out to be modified by a (subordinate) process. To put it in descriptive words: despite appearances, the "added" element is not the resultative phrase, but the activity verb.

Finally, to conclude this section, I would like to emphasize that the approach to resultative formation sketched out in the present section can be naturally taken as more compatible with Hoekstra's (1988, 1992) S(mall) C(lause) approach rather than with Neeleman's (1994) C(omplex) P(redicate) approach. In particular, here I will merely limit myself to offering two related arguments, one empirical, the other theoretical, in favor of Hoekstra's SC approach to resultatives, which is depicted in (37).²⁰¹ Let us begin with the empirical argument. This argument will be argued to give strong support to Hoekstra's SC analysis in (37), but not to Neeleman's CP analysis in (38).

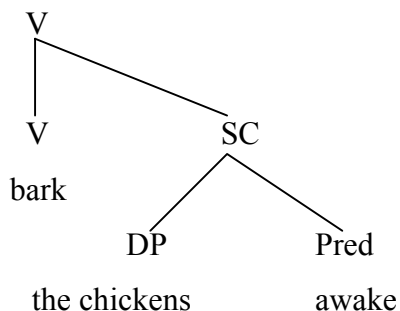


²⁰¹ See Mateu (2001c) for a more complete positive review of Hoekstra's (1988, 1992) 'Small Clause Results'.

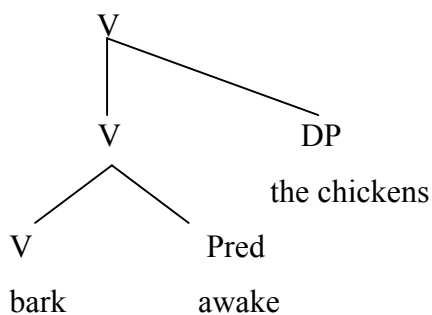


It is not clear to me how Neeleman's CP analysis could account for the above-mentioned crosslinguistic differences.²⁰² As the CP analysis stands, it is not clear what prevents some languages (i.e., verb-framed ones) from having complex resultatives. Waiting for a principled explanation of this non-trivial fact, proponents of the CP analysis will have to work out some stipulation in order to account for why Romance does not allow resultative phrases. On the contrary, I think that such a stipulation will not be necessary if a more sophisticated analysis of the syntactic structure in (39a) is adopted.

(39) a. SC analysis



b. CP analysis



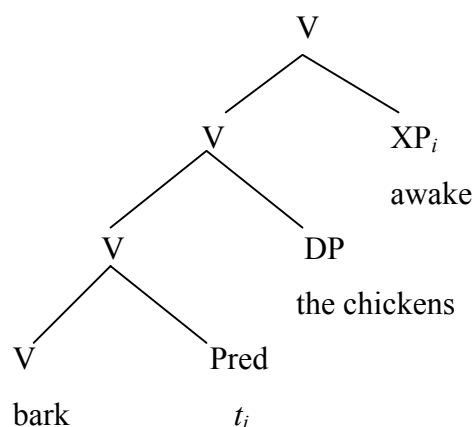
²⁰² Unfortunately, Talmy's (1985, 1991) typological work is not mentioned by Neeleman (1994). Basically, only two satellite-framed languages (Dutch and English) are taken into account in his crosslinguistic analysis of complex predicate formation.

Quite interestingly, note that the SC analysis in (39a) is nothing but the final, “surface” result of the relevant conflation process discussed above (e.g., cf. (19)). That is, eliminate the empty categories of (19) and what you will be finally faced with is (39a). In other words, what Hoekstra’s analysis in (39a) does not capture is the conflation process involved in complex resultative constructions: however, note that it is precisely this process that explains that the verb *bark* can come to have a predicative complement which is not subcategorized for by this unergative verb.

Recall that such a conflation process is not possible in Romance languages due to their verb-framed nature (see Talmy (1991)): In Romance, the telic directional element is not stranded as a satellite around the verb, but appears to be conflated into the verb, saturating it lexically, that is, providing it with phonological content. As a result, whenever telic directionality is implied, the phonological matrix corresponding to the Romance verb cannot be saturated by external, independent lexical material from a subordinated argument structure, as is the case in English.²⁰³

Concerning the competing analyses in (39), here I will limit myself to making the following critical remarks on Neeleman’s CP analysis of resultatives. I think that Neeleman’s claim that many non-verbal predicates must be extraposed in English (cf. (40)) is not well-founded, since it is based on the wrong assumption that the non-derived order is that depicted in (39b).

(40)



²⁰³ Of course, as noted above, English speakers are not forced to resort to the relevant conflation process (see section 3.1.4 below): another option would correspond to using a caused change of state verb, the Manner component being then expressed adverbially (e.g., *the dog woke (up) the chickens with its barking*).

As shown above, once a wider typological perspective is adopted (e.g., that put forward by Talmy (1985, 1991, 2000)), it becomes clear that the basic order in English is the one in which the resultative phrase encoding an (abstract) Path remains as a satellite, where '*satellite*' is to be taken here as *not immediately dominated by the verb*: cf. (39a). It should be recalled here that it is precisely the fact that Germanic languages like English or Dutch have been posited to take the Path element as a satellite, that explains why the Manner component (e.g., *barking* in (18)) can be conflated with the abstract (i.e., lexically unsaturated) eventive head of the resultative construction.

Furthermore, as noted by proponents of the SC analysis (e.g., Mulder (1992), den Dikken (1992/1995)), in Dutch or German, the basic order in (39a) can be changed to a derived order, in which the secondary Predicate turns out to be incorporated into the main verb. This is shown by the following Dutch examples in (41):

- (41) a. dat de diva de straat heeft platgelopen (Dutch)
 that the diva the street has flat-run
 ‘that the diva ran the street flat’
- b. dat Jan zijn problemen wegdanste
 that Jan his problems away-danced
 ‘that Jan solved his problems dancing’
- (Gretel de Cuyper, p.c.)

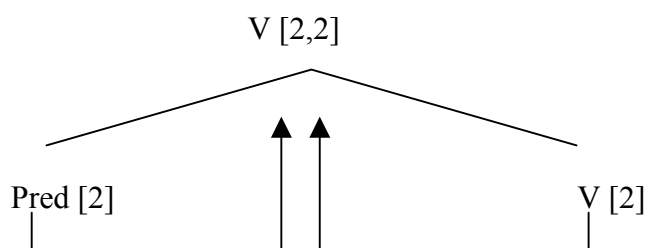
The fact that the verb and the secondary Predicate can be said to acquire a unit status should not be inferred from their primitive order, as argued by Neeleman, but can be due to a modification of the basic order by means of subsequent incorporation of the Path complement into the verb.

In short, the crosslinguistic variation under study here can be argued to receive a more natural and simple explanation within Hoekstra’s SC approach, rather than within Neeleman’s CP approach.

Next let me deal with the theoretical argument in favor of the SC analysis. The present theory of argument structure provides strong support to the often-noted

claim that the SC analysis mirrors the semantic analysis in quite a uniform and direct way. Concerning this claim, Neeleman (1994: 338) points out that “isomorphism is no more than an empirical hypothesis about the syntax-semantics interface”. To be sure, I agree with him that the isomorphism should not be based on purely esthetic reasons. In fact, the isomorphism I am arguing for is based on a highly restricted, structural conception of argument structure. In striking contrast to the present configurational theory of argument structure, Neeleman’s theory is based on a poorly explanatory device called ‘theta-role percolation’, according to which both the verb and the non-verbal predicate “attribute” (*sic*) theta-roles to the complex verbal head. Neeleman’s (1994: 10) representation of theta-role percolation is informally depicted in (42):

(42) ‘Theta-role percolation’



It would be naive to conclude that the SC analysis is simply more elegant in not requiring the descriptive mechanism of theta-role percolation. As emphasized above, the theoretically important point is that the SC analysis can be easily grounded on a more explanatory theory of argument structure. By contrast, Neeleman’s approach is based on a clearly descriptive account of theta-roles, basically that currently assumed in GB work. However, time has come when more explanatory elements must be used when dealing with argument structure. One can no longer base any fruitful theory of argument structure by appealing to vague elements like theta-roles, and to descriptive artifacts such as ‘theta-role percolation’.²⁰⁴

²⁰⁴ For an interesting review of Neeleman's (1994) dissertation, see Vanden Wyngaerd (1995). See also Neeleman & van de Koot (2001) for some refinements of Neeleman's (1994) ideas on complex predicate formation.

3.1.4. On some apparent counterexamples to Talmy's (1985, 1991) typology

To start with, let me make some remarks concerning the undeniable *fact* that "typologies leak". For example, as noted by Juffs (1996), English is a 'hodge-podge' (*sic*) concerning (complex/causative) events expressing change of state: clearly, a minimal pair like that depicted in (43) can be taken as empirical evidence that English behaves as a satellite-framed language like Chinese in (43a), but as a verb-framed language like Catalan in (43b).

- (43) a. Paquita hammered the metal flat.
b. Paquita flattened the metal with a hammer.

Moreover, I have also noted above that the following examples could be said to be more properly regarded as "Romanglish" or "Latinglish".²⁰⁵

- (44) a. John entered the room (dancing). (cf. John danced into the room)
b. John exited the castle (swimming). (cf. John swam out of the castle)

Since I do not want my present review to stay in the anecdotal domain as could be inferred from my sketchy description of the facts in (43)-(44) above, in this section I will limit myself to dealing with two relevant sets of apparent counterexamples to Talmy's (1985, 1991, 2000) typology: on the one hand, I will review two cases that have often been misanalyzed ((i) the 'variable behavior' associated to *correre*-verbs in Italian, and (ii) apparently complex resultative constructions like *John cut the meat thin*). On the other hand, I will provide a formal analysis of some Romance constructions that can be argued to involve a conflation of (negative) Motion with a Manner component (e.g., unergative verbs in existential unaccusative constructions; cf. section 2.2.3 above).

²⁰⁵ However, notice that things are more complex when examined in detail: as shown by the examples in (i), there appear to be subtle meaning differences associated to different syntactic frames. In particular, native speakers see a meaning difference between (ia) and (ic), which is similar to the one that I will comment on below concerning *John climbed the mountain vs. John climbed to the top of the mountain*. Notice that I said 'similar' and not 'identical', since the verb *climb* has an additional Manner component that the verbs *enter* and *go* lack. I will return to these tricky examples in the concluding chapter 5.

- (i) a. John entered the room.
b. *John entered into the room (cf. ^{ok}The verb *fill* does not enter into the loc. alternation)
c. John went into the room.

Let us then deal with the first relevant set of apparent counterexamples to Talmy's (1985, 1991, 2000) typology. Consider the Italian examples in (45b) and (46b), which have often been misanalyzed as involving an event type-shifting from processes/activities to accomplishments or achievements.²⁰⁶

- (45) a. Gianni ha corso per due ore. (Italian)
 Gianni HAS run for two hours
- b. Gianni è corso a casa.
 Gianni IS run loc.prep home
- (46) a. Gianni ha saltato sul tavolo.
 Gianni HAS jumped on-the table
- b. Gianni è saltato dalla finestra.
 Gianni IS jumped from-the window

Within the present framework I would like to stress the fact that examples like those in (45b) and (46b) could only be regarded as *true* counterexamples to Talmy's (1985, 1991, 2000) typological distinction between Germanic and Romance languages (cf. *supra*) *iff* these can be shown to involve the same conflation analysis as that involved in true satellite-framed constructions like those in (47) (cf. (14)).

- (47) a. John walked into the room.
 b. John danced out of the room.

Unfortunately, one of the most important problems of Talmy's typological approach is its lack of formalization. Accordingly, it seems that the relevant lexicalization pattern involved in (47) (i.e., conflation of Motion with Manner) could be said to be relevant for the Italian examples in (45b) and (46b) as well. However, there is an important remark to be made here: while English unergative verbs of manner of motion behave *systematically* as unaccusative verbs when a telic

²⁰⁶ As stressed above, it should be clear that *strictly speaking* there is no way of converting 'activities'/'processes' (e.g., *John danced*) into 'accomplishments/transitions' (e.g., *John danced into the room*). However, for the sake of exposition, let us take such a statement as descriptively correct (at least in English), even though it lacks explanatory value (see the previous section; cf. also Mateu & Rigau (2000)).

directional PP is present (e.g., cf. Levin & Rappaport Hovav (1995)), this is not the case in Italian, since it is only a very reduced number of manner of motion verbs (e.g., *correre* 'run', *saltare* 'jump', *volare* 'fly', and a few others) that apparently behave as those English examples in (47), i.e., as unaccusative verbs.²⁰⁷ So the relevant question for those who appear to equate the formation of (45b) and (46b) with that of (47) (e.g., cf. Borer (1994)) or van Valin (1990), among many others) is the following one: Which is the explanation of such a significant contrast between English and Italian?

Unless a principled answer is not provided, it seems to me that the best way of accounting for the facts is to attribute the unaccusative behavior of exceptional examples like those in (45b) and (46b) to an idiosyncratic lexical fact: *correre*-verbs are marked as [+R] (hence their unergativity) and *exceptionally* as [+T] as well (hence their unaccusativity), while the majority of manner of motion verbs (*camminare* 'walk', *ballare* 'dance', *scalare* 'climb', and *a large etc*) are only marked as [+R]. In striking contrast to verb-framed languages like Italian, the latter verbs can behave as unaccusatives in satellite-framed languages like English or Dutch *because* it is precisely in these languages that the relevant conflation process of two argument structures can take place: the main unaccusative one, which contains the satellite directional element, is conflated with the subordinate unergative one, which contains the [+R] feature (cf. (14)). In other words, the verbs in (47) can be descriptively said to acquire the [+T] feature only *derivationally*, i.e., by means of the relevant conflation process (cf. (14)). By contrast, I argue that it is an idiosyncratic fact of the Italian lexicon that the verbs in (45b) and (46b) are *directly* assigned the [+T] feature in their lexical entry, besides their corresponding unexceptional [+R] feature.²⁰⁸

²⁰⁷ Note that minimal pairs like the one in (i) are not problematic here since it is clear that no conflation process of two different argument structures is involved in the unaccusative (ib) (*vs* cf. (47a,b)). These examples in (i) merely involve the ability of construing a similar conceptual scene in two different syntactically transparent semantic ways (roughly, DO BLOOM (ia) *vs*. COME INTO BLOOM (ib)). Accordingly, I will not discuss these examples here (cf. my discussion on Sorace's (2000) work in section 2.2.2 above).

(i)	a.	La pianta ha	fiorito.	(Italian)
		The plant HAS	bloomed	
	b.	La pianta è	fiorita.	
		The plant IS	bloomed	

²⁰⁸ See Folli (2000) and Folli & Ramchand (2002) for a different analysis of the examples in (45b) and (46b). For reasons of space, I cannot review their proposal here.

Next I want to deal with an important distinction that must be drawn clearly when dealing with resultative constructions: 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 (1990), Demonte (1991a), Demonte & Masullo (1999), Gumiel (2002), Morimoto (1998, 2001), Napoli (1992), Washio (1997), among others). Although apparent complex resultatives like those in (48) have been classified sometimes as "normal" resultatives, it can however be shown that they do not behave as true resultatives but as adverbial modifiers. Next I will review some evidence put forward by Washio (1997) that shows their "adverbial" status.²⁰⁹

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

Washio (1997: 29)

As noted by Washio, adjectives like those found in (48) 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 (48) is coherent with their formal property of lacking agreement.²¹⁰ Quite correctly, Washio (1997: 17) relates the data in (48) to the possibility that these adjectives can often alternate with adverbs with virtually no difference in meaning (cf. (49)):

²⁰⁹ More evidence in favor of the "adverbial" (that is, non-argumental) nature of Romance resultatives can be found in Legendre (1997). Here I will limit myself to quoting the relevant 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". For reasons of space, I will not comment on her syntactic analysis of false/"adverbial" resultatives here.

²¹⁰ This notwithstanding, in Romance languages like Catalan or Spanish, the adjectives in (i) are not "used as adverbs", but agree with the noun. Accordingly, other tests will have to be worked out in order to show their non-argumental nature (e.g., cf. the following footnote).

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

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

Furthermore, Washio observes that the standard paraphrase used by proponents of the lexical subordination approach is not valid when applied to “adverbial” resultatives:²¹¹

- (50) a. He cut the meat thick (\neq He caused the meat to become thick by cutting it).
 b. He hammered the metal flat (= 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 me that she included any element with a sense of resultativity under the label of “resultative predicate”. Consider her following observation in (51):

- (51) “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*”.
- Napoli (1992: 72)

Her observation in (51) can be explained as follows. Italian has “adverbial” resultatives like *the butcher slices meat thin* or *John painted the wall white*, but not

²¹¹ To be sure, more tests could 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)

the true resultatives found in English, namely, those lacking an "adverbial" character like *Sue laughed Ralph out of the room* or *the dog barked the chickens awake*.²¹²

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 (52):

- (52) a. Gli operai hanno caricato il camion pieno al massimo. (Italian)
 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 (52) can be explained as follows: the AP *pieno al massimo* in (52a) acts as a modifier of the result lexically encoded into the causative change of state verb *caricare* ('load'). I agree with Morimoto's (1998, 2001) and Demonte & Masullo's (1999) 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 already present in the verb. Accordingly, note that the label of "resultative" for such modifiers is not but a misnomer. The claim that "adverbial" resultatives are modifiers forces us to conclude that they must appear outside of the main argument structure of the sentence: they are adjoined to VP, as shown by Legendre (1997).

On the other hand, the ungrammaticality of (52b) is coherent with the absence of true/non-adverbial resultatives in Romance. I have shown that true resultative phrases must be internal to the main argument structure of the sentence (cf. (18-19) above).

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 the present approach to (true/"non-adverbial") resultatives.

²¹² 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 the approach adopted here. Crucially, its lacking linking flexibility must be related to the fact that Italian is a verb-framed language.

To conclude this section on apparent counterexamples to Talmy's (1985, 1991) typology, let us now deal with those problematic cases commented on in section 2.2.3 above, which can also be shown to involve unergative verbs integrated (now: conflated) into existential unaccusative constructions. Some relevant examples are given in (53).²¹³

- (53) a. Ce ne nuota tanta di gente, in quella piscina. (Italian)
 loc.cl. of them swims many, of people, in that pool
- b. Il a mangé beaucoup de linguistes dans ce restaurant. (French)
 cl. has eaten many of linguists inside this restaurant
- c. En aquesta coral, n'hi canten molts, de nens. (Catalan)
 In this choir of them-loc.cl. sing many, of boys.
- d. Aquí han dormido animales. (Spanish)
 Here have slept animals

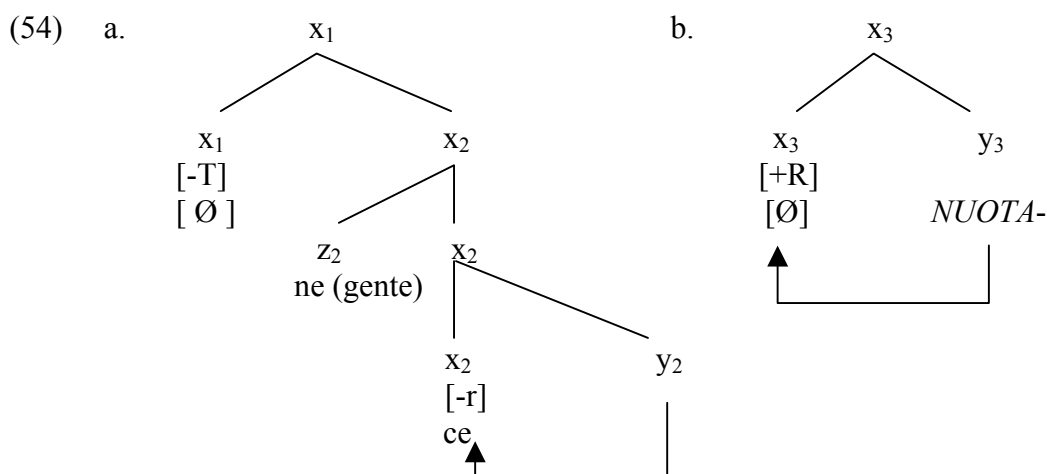
To start with, it should be clear that it is not my intention here to provide a complete syntactic and semantic account of these examples, since doing that would take me too far afield. My goals are much more limited: while in section 2.2.3 above I limited myself to providing a relational syntactic and semantic account of why it is the case that in existential unaccusative constructions with unergative verbs, HAVE turns out to be the selected auxiliary in French but not in Italian, now I will limit myself to showing why these constructions in (53) cannot be taken as real counterexamples to Talmy's (1985) typology.

I will exemplify my analysis with the Italian example in (53a). Before analyzing (53a), recall the logic of the argument above when dealing with satellite-framed constructions like *The boy danced into the room*: the Manner component (i.e., *dancing*), which has been argued to be translated presently as a subordinate unergative argument structure expressing an activity, is allowed to be conflated into the main unaccusative eventive head *iff* (i) there is no prepositional-like directional element conflated into this motion head (cf. *John entered the room (dancing)*) (i.e., *iff* the Romance lexicalization pattern is not involved), and (ii) the matrix of the

²¹³ For more detailed discussion of these examples, see Lonzi (1985), Levin & Rappaport Hovav (1995), Centineo (1996), Pollock (1986), Hulk (1989), Legendre (1989, 1990), Hoekstra & Mulder (1990), Rigau (1997), Mateu & Rigau (2002) and Torrego (1989), among others. The examples in (53) are taken from these works.

main motion head is not provided with phonological content via insertion of a 'light verb' (cf. *John went/got into the room (dancing)*).

Mutatis mutandis, I want to argue that a similar analysis is valid for those constructions in (53). A subordinate unergative argument structure (e.g., that expressed by *nuotare* 'swim' in (54b)) is allowed to be conflated into the unaccusative head expressing a negative transition (let's say an abstract *BE* (cf. Mateu (1997)) provided that this head is not saturated with phonological content via insertion of a light verb.²¹⁴ Otherwise, we must resort to an independently generated argument structure like that in (54b) in order to saturate the phonologically null matrix of the main unaccusative head in (54a). The resulting complex argument structure is depicted in (55).



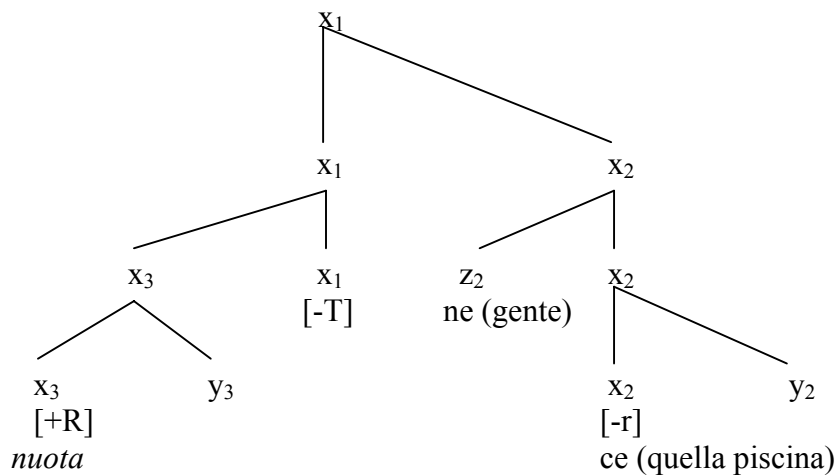
²¹⁴ For example, consider the following sentence, where the verb *essere* is used.

- (i) *Ne c' è tanta, di gente, in quella piscina.* (Italian)
 'Of them loc.cl.is many, of people, in that pool'

See Moro (1997, 1998) for an excellent treatment of *ci-sentences*, where the locative clitic *ci* is analyzed as the raised SC predicate (see also Hoekstra & Mulder (1990)). But see Rigau (1997) for arguments against such an analysis when translated to unaccusative constructions like the Catalan one in (53c). I will not review these complex issues here, since that would force me to discuss the syntax and semantics of the existential verbs *BE/HAVE* across languages and/or constructions (e.g., cf. (ii)), an issue beyond the scope of this section: cf. Benveniste (1960), Guéron (1994), Freeze (1992), Kayne (1993), Rigau (1994, 1997), Hoekstra (1994), den Dikken (1997), Ritter & Rosen (1997), among others, and the compilatory volume edited by Rouveret (1998)). Furthermore, I will not review Moro's (1997, 1998) interesting theoretical and empirical arguments against deriving *HAVE* via incorporation of a prepositional-like element into an abstract predicate *BE*. Be this as it may, it should be clear that the insights of both approaches (the 'incorporationist' account or the 'anti-incorporationist' one) can be equally translated into the present framework.

- (ii) a. *Ci sono due mele.* (Italian)
 loc.cl ARE two apples
 b. *Hi ha dues pomes.* (Catalan)
 loc.cl HAS two apples
 c. *Il y a deux pommes.* (French)
 exp loc.cl HAS two apples
 'There are two apples'.
 a'. *sono* [SC due mele ci] (cf. Moro (1997))
 b'. [V *P_r-BE*] [P hi [P *t_i* dues pomes]] (cf. Rigau (1997))
 c'. *il a* [SC deux pommes [y]] (cf. Hoekstra & Mulder (1990))

(55)



To conclude the present section, I would like to recall Juffs's (1996) and Mateu & Rigau's (2002) point that Talmy's (1991) typological distinction between satellite- vs. verb-framed languages can be argued to hold for constructions and/or lexical-semantic domains, rather than for languages *tout court*. Moreover, as I pointed out above when describing the data in (43), it can also be the case that "a same language" may present instantiations of both lexicalization patterns in a single lexical-semantic domain. Accordingly, two relevant conclusions worth being remarked are: (i) typologies leak and (ii) they cannot be drawn across-the-board, which do not necessarily mean that generalizations cannot be established, to be sure. In fact, I hope to have shown that we can work out some of the relevant ones (at least those concerning the argument structure representations).

3.2. Conflation processes in complex denominal verbs

The specific goal of this section is to provide an explanation of why complex denominal verbs like those in (56) are typically absent from Romance languages (and more generally, from 'verb-framed languages').

- (56) a. Er ver-gärtner-te sein gesamtes Vermögen. (German)
he VER(away)-gardener-ed his whole fortune
'In gardening, he used up all his fortune'.
- b. Sie er-schreiner-te sich den Ehrenpreis der Handwerkskammer.
she ER-carpenter-ed herself_{DAT} the prize of the trade corporation
'She got the prize of the trade corporation by doing carpentry'.
- Stiebels (1998: 285-286)

More generally, it is my intention to provide a unified explanation of why “morphological objects” like those in (56) and “syntactic objects” like those in (57) are typically absent from Romance languages (and more generally, from verb-framed languages). As noted above, complex resultative constructions like those in (57a-c) or complex Path of motion constructions such as those in (57d-g) are typically absent from Romance languages.²¹⁵

As in the previous section, I will heavily draw on syntactically-oriented work by Snyder (1995a), Klipple (1997) or Mateu & Rigau (1999, 2002), when dealing with the ‘directionality/resultativity parameter’.

- (57) a. Die Gäste tranken den Weinkeller leer. (German)
the guests drank the wine cellar empty
- b. Die Jogger liefen den Rasen platt.
the joggers ran the lawn flat
- c. Es regnete die Stühle naß.
it rained the chairs wet Wunderlich (1997b: 118)²¹⁶
- d. Die Kinder liefen in das Zimmer (hinein). (German)
the children ran into the room (into)
‘The children ran into the room’.
- e. Die Kinder sind an das andere Flußufer geschwommen.
the children are to the other riverbank swum
‘The children swam to the other side of the river’.
- f. Die Kugel pfiff durch die Luft.
‘The bullet (lit. sphere) whistled through the air’.
- g. Der Lastwagen rasselte den Berg hinunter.
‘The truck rattled down the hill’.

Levin & Rappaport Hovav (1996: 503-504)

²¹⁵ See section 3.1.4 above for some apparent exceptions concerning the so-called ‘unaccusativization’ of unergative verbs.

²¹⁶ As pointed out by Wunderlich (1997b: 118), “certain combinations of adjectival predicate and verb may be lexicalized as particle verbs, for example, *leertrinken* ‘drink empty’, *plattlaufen* ‘run flat’, *naßregnen* ‘rain wet’”.

The present section, which is largely based on Mateu (2001d), is organized as follows: In section 3.2.1 I will review Stiebels's (1998) lexical-semantic analysis of complex denominal verbs like those exemplified in (56). In section 3.2.2 I will review the four possible combinations of the preverb with the denominal base commented on by Stiebels (1998: 278-281). In section 3.2.3. I will present an alternative relational syntactic and semantic analysis, which is inspired by Spencer and Zaretskaya's (1998) lexical subordination analysis of verb prefixation in Russian. I will show that the main evidence in favor of the present account comes once again from the parameterization of Talmy's (1985, 1991, 2000) lexicalization patterns commented on above in section 3.1. Finally, in section 3.2.4 I summarize the main conclusions worth being drawn from the present analysis of complex denominal verbs.

3.2.1. Stiebels's (1998) LDG analysis of complex denominal verbs in German

Basing her analysis on the L<exical> D<ecomposition> G<rammar> (LDG) framework, Stiebels (1998) argues for a semantically based morphological derivation of complex denominal verbs like those in (56):²¹⁷ For example, in (58) are depicted the derivational steps her LDG analysis of (56a) is argued to follow. The ARG-operation in (58c) is a semantic argument extension operation, which is posited in order to allow the semantic integration of the prefix into the verb. In (58) the prefix *ver-* which functions as a lexical adjunct turns out to affect the argument structure of the base denominal verb by adding one argument, that is, “the consumed object” (*sic*): cf. Stiebels (1998: 286).

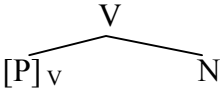
- | | | | |
|------|----|---|--------------------------------------|
| (58) | a. | [] _v | 8Q 8x 8s Q (x) (s) |
| | b. | [gärtner] _v | 8x 8s GARDENER (x) (s) |
| | c. | ARG (gärtner): | 8R 8x 8s [GARDENER (x) (s) & R (s)] |
| | d. | <i>ver-</i> | 8u 8s CONSUME (u) (s) |
| | e. | [ver[gärtner] _v] _v | 8u8x8s[GARDENER(x)(s)&CONSUME(u)(s)] |

²¹⁷ In LDG-based work, the S(ematic) F(orm) level (formulated in Categorical Grammar terms) is to be taken as that representation encoding all grammatically relevant information of meaning. It comprises the lexico-semantic decomposition of lexical items that may combine general template-forming predicates with idiosyncratic atomic predicates. As shown in (58), theta roles are represented by λ -operators that abstract over the argument variables in SF according to their depth of embedding in SF (cf. Wunderlich (1997a,b)).

As can be inferred from her LDG analysis in (58), Stiebels posits that in complex denominal verbs, the preverb and the denominal base have distinct lexical entries, this being in accordance with the “methodological requirement of semantic composition” (Stiebels (1998:285)).

3.2.2. *On the morphological structure of complex denominal verbs*

According to Stiebels (1998: 278f.), four alternative morphological analyses can be considered with respect to how the preverb is to be combined with the nominal base:

- (59) a. $P + N + []_V \rightarrow P + [N]_V \rightarrow [P + [N]_V]_V$
 b. $N + P + []_V \rightarrow N + [P []_V]_V \rightarrow [P + [N]_V]_V$
 c. $P + N + []_V \rightarrow [P + N]_P + []_V \rightarrow [P + [N]_V]_V$
 d. 
- Stiebels (1998: 278-280)

Concerning the morphological analysis of complex denominal verbs, Stiebels assumes (59a) to be the default case. That is, Stiebels assumes that in the unmarked case, complex denominal verbs are formed from simple denominal verbs with subsequent preverb addition. The option in (59a) is said to be in tune with assuming an isomorphism between morphological derivation and semantic composition.

The second option, the one depicted in (59b), is assumed to be a marked option. According to Stiebels (1998: 279),

- (60) “(...) in this case <(i.e., (59b): JM>, the abstract verb is combined with the preverb first, but since the latter cannot constitute a possible verbal stem (**ver-en*, **auf-en*), some further element must be integrated to form the stem, namely the base noun (...). Since the abstract verb just represents some PF-less element, the integration of the base noun does not destroy already existing morphological structure. Moreover the structure in (23) <i.e., (59b): JM> accounts for the fact that the prefixes combine only with verbs (...) Generally, this derivation has to be chosen if the unmarked derivation <i.e., that in (59a): JM> crashes under the requirement of isomorphism between morphology and semantics” .

According to Stiebels, both (59a) and (59b) exhaust the options. She argues that the remaining “options <(59c) and (59d): JM>, both proposed in the literature, are confronted with more difficulties than the two other options.”

Stiebels points out that the option depicted in (59c) (that is, the preverb first combines with the noun, and then the resulting complex combines with the abstract verb) is implicit in Hale & Keyser’s (1993f.) approach. According to Stiebels, one important problem with such an option is that the derivation <in (59c): JM> does not account for the fact that the prefixes are purely verbal prefixes, and that most of the P-N complexes cannot occur independently.

Finally, she notices that the option in (59d) has been analyzed by linguists such as Lieber & Baayen (1993), who analyze the preverb as a category-shifting element, that is, as a verbal head. See Stiebels (1998: 280-281) for a criticism of the option in (59d).

After having presented those four options depicted in (59), here I will limit myself to making some remarks concerning Stiebels’s criticism of the option in (59c), which is said to be implicitly adopted by Hale & Keyser.

Despite Stiebels's claims to the contrary, it is the case that in many transitive denominal verbs of Catalan or Spanish (for example, *embotellar* (lit. ‘in-bottle’)), the prefix could in fact be argued to maintain a semantic relation with the incorporated noun, this fact being structurally reflected by the option in (59c), which is to be translated into Hale & Keyser's (1998) lexical-syntactic analysis in (61).²¹⁸

(61) [V V [P N [P P N]]]

(62) [V PUT [P wine [P INTO bottle]]]

By contrast, notice that in a complex denominal verb like that in (56a) there is no semantic relation to be established between the resultative prefix *ver-* (‘away’) and the incorporated noun (i.e., *gärtner* ‘gardener’). Clearly, prefixed denominal

²¹⁸ According to HK (1998), both locative verbs (e.g., *bottle*) and locatum verbs (e.g., *saddle*) are assigned the same lexical-syntactic structure, that depicted in (61). The only difference between them concerns the semantic value of P: it is a ‘terminal coincidence relation’ in locative verbs, but a ‘central coincidence relation’ in locatum verbs (but see section 1.2.3 above for a different semantic analysis).

verbs like *embotellar* ('to bottle') cannot be assigned the same argument structure as that corresponding to those complex denominal verbs in (56).

This important observation leads us to point out that although Stiebels is correct when pointing out that the option in (59c) can be said to hold for Hale & Keyser's implicit analysis of prefixed denominal verbs like *embotellar* ('to bottle'), it is not correct to infer that the option in (59c) is the only one possible in a syntactically transparent theory of argument structure, like Hale & Keyser's or the one assumed here. In fact, in the following section (section 3.2.3), I will claim that those complex denominal verbs in (56) can be argued to be analyzed by appealing to a more sophisticated variant of the option depicted in (59b).

On the other hand, Stiebels (1998) argues that Hale & Keyser's syntactic approach appears to be problematic when confronted with complex denominal verbs like those in (56). Her main criticism is based on the fact that complex verbs with an integrated adjunct (e.g., cf. the prefixes *ver-* and *er-* in (56a) and (56b)) should not occur according to a syntactic approach like that of Hale & Keyser. In (63) and (64) are quoted some of her relevant criticisms that will be refuted presently:

(63) "(...) Unless adjunct projections are integrated into lexical structure, adjunct incorporation cannot be handled within Hale & Keyser's approach (...) complex denominal verbs <like those in (56a-b): JM> constitute an important touchstone for Hale & Keyser's proposal." Stiebels (1998: 269-270)

(64) "(...) as with complex denominal verbs in German, Hale & Keyser might have problems to account for complex denominal verbs in English (e.g., *nail down*, *brick over the entrance*, *pencil out the entry*, *brush out the room*) for which the role of the preverb should be clarified". Stiebels (1998: 298)

3.2.3. Complex denominal verbs and 'Lexical subordination'

In this section I present a rebuttal of Stiebels's (1998) lexical adjunction analysis of preverbs in complex denominal verbs like those in (56) above. My reply to her analysis starts with the following remark: Stiebels's (1998: 285) requirement that the verbal prefixes in (56a-b) be "lexical adjuncts", is not to be taken for granted. According to the 'lexical subordination approach' (cf. Levin and Rapoport (1988);

dry),²²¹ while the subordinate predicate (i.e., the semantically secondary predicate) corresponds to the verb (e.g., {*write/drink*}).

To be sure, one of the most important advantages that can be attributed to the lexical subordination analysis is that it can provide an elegant explanation of so-called ‘unselected object constructions’.²²² For example, the unselected kind of direct object in (65a) is due to the fact that it is only with the prefix *IZ-* (‘out’) that the basic verb *pisat’* (‘to write’) can take such an object. As Spencer and Zaretskaya (1998: 17) correctly point out, “the best way of regarding this case is to take the *iz-* prefix as the core predicator in a complex predicate, with the activity verb *pisat’* as a subordinate predicator”. Given this, notice that a unified analysis of unselected object constructions such as those in (66) appears to be possible.²²³ Indeed, as shown by Levin and Rapoport (1988), it is precisely this unification what the lexical subordination analysis can account for in quite an elegant way

- (66) a. They drank the pub dry.
 b. They danced the night away.
 c. Pat slept her way to the top.
 d. On pro-pil vsju svoju zarplatu (Russian)
 he PRO-drank all his wages
 ‘He’s drunk his way through all his wages.’
 e. Rebēnok do-kričal-sja do xripoty
 baby DO-cried-SJA(itself) to hoarseness
 ‘The baby cried itself hoarse.’

Quite interestingly, notice that Spencer and Zaretskaya’s (1998) lexical subordination analysis of verb prefixation can be extended naturally to explain the German complex denominal verbs in (56), which are also examples of unselected object constructions: (56a) could then be argued to be assigned the LCS analysis in

²²¹ Spencer and Zaretskaya (1998: 18) point out that “the main difference is that the adjective *dry* in the English resultative can be semantically more specific than the rather vague prefix in the Russian (though it is important not to overemphasize the degree to which secondary predicating adjectives actually express a meaning beyond that of an end point of some kind).”

²²² See Goldberg (1995), Wunderlich (1997b), Spencer and Zaretskaya (1998), Mateu (2001a), and McIntyre (2002), among others.

²²³ The Russian examples in (66d,e) are taken from Spencer and Zaretskaya (1998: ex. (74, 83)).

(67), whose ‘structural semantics’ is essentially identical to that in (65b), the differences being reduced to those having to do with their different ‘idiosyncratic semantics’.²²⁴

(67) [[CAUSE [ACT (he)], {VER-/“AWAY”} (all his fortune)], BY [GARDEN (he)]] (i.e., ‘he caused all his fortune to go away by gardening’)

This said, although I agree with the descriptive insights of Spencer and Zaretskaya’s (1998) analysis of verb prefixation as lexical subordination, I disagree with their claims quoted in (68):

(68) “(...) resultatives are complex predicates formed at a *semantic level* of representation and not constructions formed in the syntax” (p. 4; emphasis added: JM) .

“(…) One indication that we need to form the complex predicate at a *lexical level* comes from the fact that many types of resultative are lexically restricted, in that only certain types of lexeme can serve as the syntactic secondary predicate” (p. 11; emphasis added: JM).

With Hale & Keyser (1993f.) and Marantz (1997), I disagree with Spencer and Zaretskaya's claim that showing that a process has arbitrary lexical restrictions is an inevitable sign that a syntactically transparent analysis is not involved.²²⁵

Unlike Spencer and Zaretskaya (1998), I want to claim that complex predicates like those in (56) and (57) are not to be formed at a (non-syntactically transparent) lexical-conceptual level of representation (i.e., *LCS*), but at a syntactically transparent level that allows us to account for the parameterization of those morphosyntactic facts affecting argument structure.

Accordingly, I want to argue that a purely semantic approach to verb prefixation like that pursued by Spencer and Zaretskaya (1998) can be granted

²²⁴ See Rappaport Hovav and Levin (1998) for a particular view of the distinction between *structural* vs. *idiosyncratic* components of lexical meaning. See also chapter 1 above.

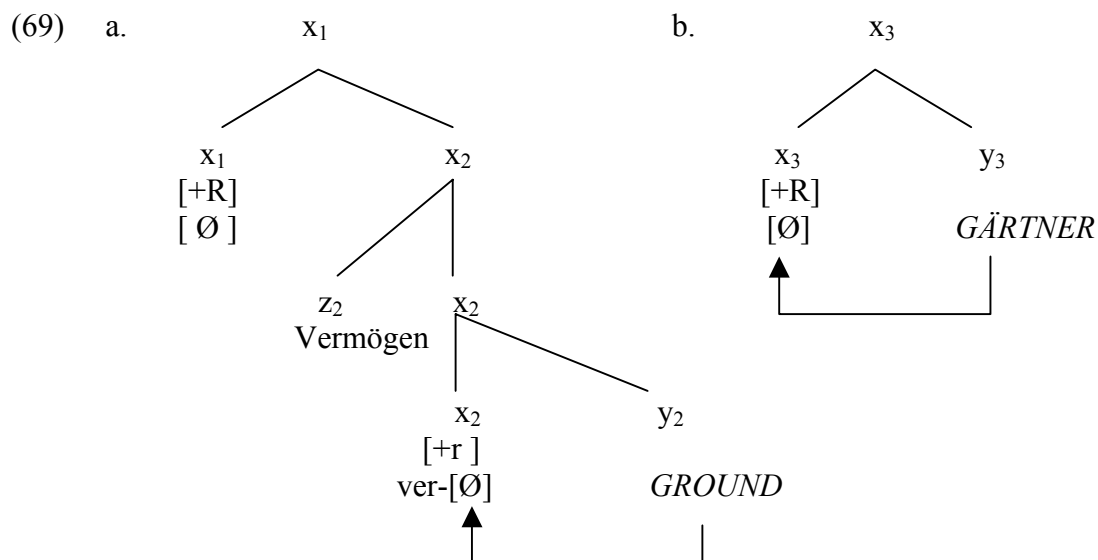
²²⁵ See Hale & Keyser’s (1993: 94-99) discussion on why lexical processes are not to be seen as radically opposed to syntactic processes. Their following statement is clearly representative of this: “In reality, all verbs are to some extent phrasal idioms, that is, syntactic structures that must be learned as the conventional ‘names’ for various dynamic events” (p. 96).

descriptive validity but it cannot provide a *principled* explanation of important parameterizable morphosyntactic facts like those put forward by syntactically-oriented works like Snyder (1995a), Klipple (1997), or Mateu and Rigau (1999, 2002), among others. Relevant to our present concerns is the fact that it should be clear that the pure semantic approach, as it stands, cannot explain why complex predicates like those in (56) or (57) exist in some languages (e.g., in German or Dutch) but not in others (e.g., in Catalan or Spanish). By contrast, there is empirical evidence pointing to the fact that the kind of morphosyntactic variation examined by Mateu and Rigau (1999, 2002) plays a crucial role in accounting for the formation of the data in (56) or (57): To the extent that this kind of parametrized variation cannot be explained in *purely* lexical-conceptual terms, it will be argued to be regarded as natural to transfer the responsibility of the formation of these complex predicates to the realm of the syntactically transparent argument structures argued for presently. Furthermore, my analysis of complex denominal verbs like those in (56) will also be argued to be grounded on Talmy's (1985, 1991) typological work on 'conflation processes', which have been shown to involve the crucial role of morphosyntax in the explanation of the parametric variation between satellite-framed vs. verb-framed languages (cf. Snyder (1995a), Klipple (1997) or Mateu & Rigau (1999, 2002)).²²⁶

According to Talmy's descriptive typology, examples like those in (56) fall into the same *lexicalization pattern* as that involved in satellite-framed constructions expressing an agentive telic Path of motion construction. To put in Talmy's (1991) terms, (56a) involves conflation of _{AGENTIVE}MOVE with _{SUPPORTING}[EVENT].

Let us put it in our present terms. The formation of the complex argument structure corresponding to (56a) involves two different argument structures: the main transitive one depicted in (69a), which expresses a caused change of location (i.e., 'to cause something to go away'), and the subordinate unergative one depicted in (69b), which expresses an activity (i.e., 'to garden').

²²⁶ It should then be clear that my assuming that syntax is involved in the formation of those complex denominal verbs in (56) is not simply grounded on purely theoretical reasons discussed by Hale & Keyser (1993f.) or Marantz (1997), which lead to the conclusion that derivational morphology is syntactic(ally transparent).



With Stiebels, I assume that preverbs belong to the category of prepositions: that is, x_2 is to be morphosyntactically realized as P .²²⁷ Moreover, following Hale & Keyser, I consider prepositions as birelational elements: both directional/resultative preverbs like *ver-* (i.e., ‘away’) and PPs headed by ‘telic’ relations like *to* can then be argued to be assigned the same argument structure (both contain a ‘terminal coincidence relation’). The relevant difference is that directional/resultative preverbs involve the conflation of a non-relational element y (i.e., an abstract Ground) into a directional element x_2 (i.e., the terminal coincidence relation).²²⁸ As in Hoekstra’s (1988, 1992), Mulder’s (1992) or den Dikken’s (1992/1995) Small Clause (SC) approach, the directional/resultative prefix (e.g., *ver-*) is also assumed here to be the

²²⁷ Following Stiebels (1998: 278), I use the notion *preverb* to subsume both *prefixes* and *particles*, and the notion *complex verbs* to refer to all preverb-verb combinations. According to Stiebels (1998: 277), “both prefixes and particles belong to the category of prepositions, but they form different morphological objects (...) prefixes are morphologically minimal ($[+min]$) in that they form complex verb stems that can never be separated, while particles in the particle-verb combination are morphologically maximal ($[+max]$) in that they must be separated from the stem in all derivations (including inflection) as well as in sentences that display finite verb movement (verb-first structures, i.e.: main clauses).” Although both prefixes and particles have different morphological properties, their argument structure properties can be argued to be essentially the same ones (cf. Wunderlich (1997b)).

Of course, a review of the relevant literature on so-called *particled* and *prefixed verbs* is beyond the scope of this section (e.g., cf. Dehé et al. (2002) for a recent compendium. See also Kayne (1985), Booij (1990), Lieber & Baayen (1993), Neeleman (1994), Stiebels & Wunderlich (1994), Svenonius (1994), den Dikken (1995), Lüdeling (2001), McIntyre (2001, 2002), and Zeller (2001a,b), among many others).

²²⁸ See also Svenonius (1996) and Hale & Keyser (2000b) for the proposal that bare particles incorporate their complement.

head of the inner “SC” projection (i.e., x_2), which turns out to be adjoined to the superior complex verbal head because of its affixal status.

The conflation of the two argument structures in (69) is to be explained as follows: the satellite (i.e., non-conflating) nature of the Path relation *ver-* in (69a) allows the independently generated complex unergative head in (69b) to be conflated into the null main transitive head (i.e., x_1 in (69a)),²²⁹ the former providing the latter with phonological content (cf. (70)).

By contrast, Romance languages, which typically lack complex verbs like those in (56), are verb-framed: the telic directional relation is conflated into the eventive head, this conflation being fossilized (cf. *supra* for discussion on so-called 'Path verbs' in Romance). This prevents a Manner component (in my terms, an unergative argument structure) from being conflated into the main argument structure.²³⁰

²²⁹ Recall that we assume that the external argument (i.e., *er* 'he') is to be introduced by the relevant functional projection (be it Chomsky's (1995) v or Kratzer's (1996) *Voice Phrase*).

²³⁰ As noted above, "typologies leak": for example, in the following complex verbs in (i-ii), the satellite prefix can be argued to act as the main predicator, while the verbal head, which expresses an activity, acts as the subordinate one: cf. lit. 'the plane passed over the airport flying'; 'Jean went there running' (I am indebted to Soledad Varela for helpful discussion concerning examples like that in (i)).

(i) L'avió sobrevolà l'aeroport. (Catalan)

the plane over-flew the airport

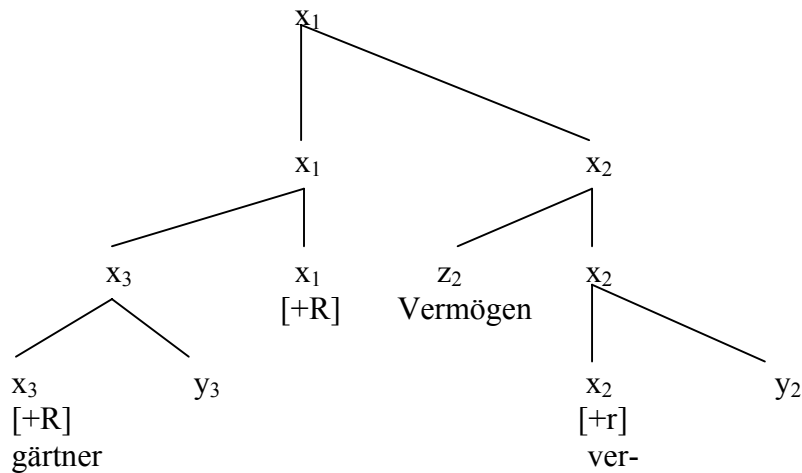
(ii) Jean est accouru. (French)

Jean IS prep-run

In fact, the satellite-framed pattern shown in (ii) was quite frequent in Old French (cf. Dufresne et al. (2002); see also Bartra (2002a) for similar data from Old Catalan that follow this pattern). Quite interestingly, it could be the case that the following quote from Dufresne & Dupuis (2002) is to be read as involving a shift from a satellite-framed language (Old French) to a verb-framed one (Modern French). I leave this very interesting topic for future research (I am grateful to Anna Bartra for showing me the relevance of diachronic data to my research on conflation processes).

(iii) "As in Slavic languages, Old French had a set of directional markers that could be associated with state and activity verbs. These prefixes, derived from Latin prepositions, were used to modify the aspectual meaning of the verb. Aspectual prefixation may transform a durative activity such as *river* 'to sail along the coast' into an accomplishment <cf. Fr. *arriver* 'to arrive': JM>. (...) This very productive aspectual process of Old French is no longer part of the French grammar after the 16th century. Only 8 new verbs were created with the prefix *a-* after that date. In Modern French, the verb *ajourner* 'to postpone' cannot be analysed as *a+journer*." Dufresne & Dupuis (2002)

(70)



On the other hand, I would like to emphasize here that the structural meaning involved in the so-called ‘lexical subordination process’ depicted in (67) above is to be read off the resulting complex argument structure in (70), roughly, that depicted in (71):

(71) [(he) [[DO-garden]-CAUSE] [(all his) fortune away]] (i.e., ‘he caused all his fortune to go away by doing gardening’)

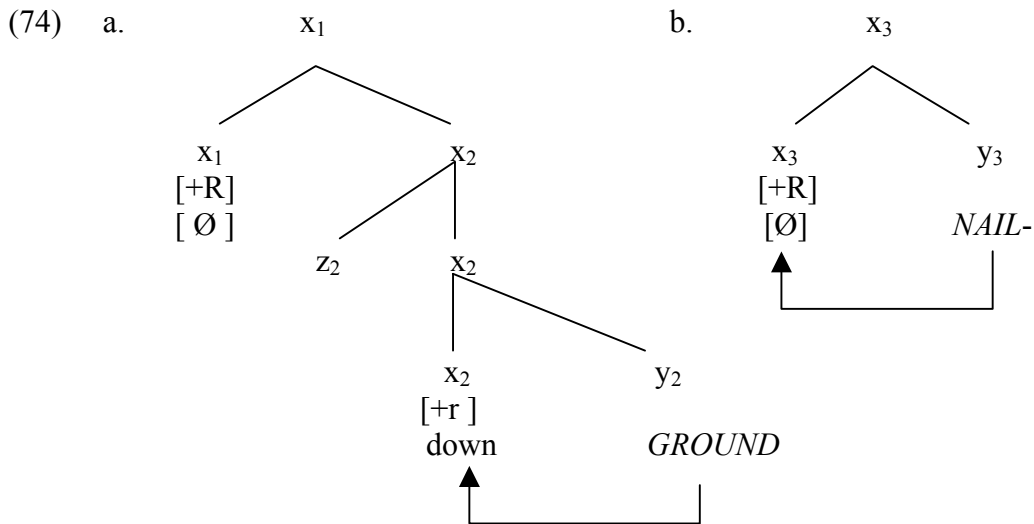
Furthermore, as noted above, an additional step in the derivation of (70) seems to be involved: the affixal nature of the Path relation *ver-* forces it to be adjoined to the superior complex eventive head. By contrast, such an additional step is typically missing in English, as shown in (72a), even though some examples similar to those in (56) can also be found in this language (e.g., cf. the very productive *out-*prefixation pattern commented on by Talmy (1991: 508): see (72b).

- (72) a. He gambled all his fortune *away*.
b. I *outplayed/outswam* him.

Quite interestingly, notice moreover that the lexicalization pattern accounting for the German examples in (56) is the same one holding for English complex denominal verbs like *nail down* or *brick over*. This seems then the adequate place to refute Stiebels’s (1998: 298) words quoted in (64) above, repeated in (73).

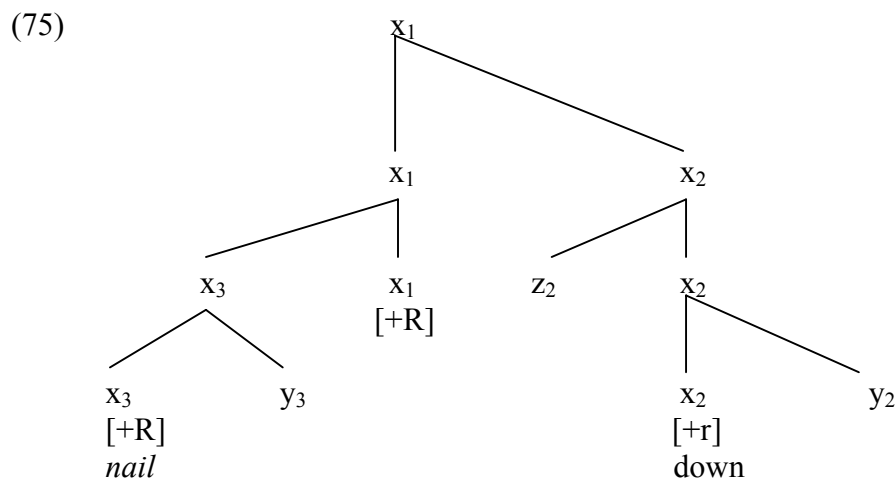
(73) “(...) as with complex denominal verbs in German, Hale & Keyser might have problems to account for complex denominal verbs in English (e.g., *nail down*, *brick over the entrance*, *pencil out the entry*, *brush out the room*) for which the role of the preverb should be clarified”.

My rebuttal will be grounded on the descriptive basis of Talmy’s (1985, 1991) typological work on conflation processes, which is not taken into account by Stiebels (1998). For example, consider the complex denominal verb *to nail down*, which can be regarded as the result of conflating two different argument structures, those depicted in (74). (74a) is a transitive one, which contains a phonologically null eventive head that subcategorizes for a non-eventive one as complement: its head, the particle *down*, is to be taken as the result of conflating a non-relational element y_2 (i.e., an abstract Ground) into the head expressing a terminal coincidence relation (cf. *supra*). Its specifier z_2 is to be interpreted as Figure. On the other hand, (74b) is a denominal verb, which is formed by conflating the nominal root *nail-* into another phonologically null head expressing an activity (hence the activity of *nailing*).



As stressed by Hale & Keyser (1998), phonologically empty matrices associated to lexical heads must be saturated at PF. As it stands, the argument structure in (74a) would then crash at PF. Crucially, the Path relation (e.g., *down*) has satellite status in English, this being unable to saturate the empty phonological properties of the transitive eventive head in (74a). An option becomes then available: namely, to resort to an independent argument structure object (e.g., that in (74b)) in

order to saturate the empty phonological properties of the eventive head in (74a); the null properties of this head allow an independent argument structure object with full phonological content (that expressed by *nailing*) to be conflated into it. The same generalized transformation operation we made use of in the formation of the German examples in (56) can also be argued to be resorted to when accounting for complex denominal verbs like *nail down* or *brick over*. The resulting complex argument structure is depicted in (75):



This said, let me conclude this section with the following remarks. The present approach to complex denominal verbs is to be regarded as a particular way of attempting to provide a principled explanation of how to deal with the crosslinguistic variation in the "lexical domain" that cannot be expressed in *purely* semantic terms: Drawing heavily on Talmy's (1985, 1991, 2000) typologically-oriented work, I have taken pains to show that there is a unified explanation of why Romance languages (and more generally, verb-framed languages) do not typically have "morphological objects" like those complex denominal verbs in (56) nor "syntactic objects" like those complex resultative-like constructions in (57).

Quite interestingly, the latter conclusion could be taken as an argument in favor of Marantz's (1997) criticism of those who try to make morphological analysis "in the privacy of their own lexicon", i.e., outside the syntactic/computational system.²³¹

²³¹ But see Varela & Haouet (2001) for some arguments against Marantz's (1997) antilexicalist proposals. For reasons of space, I will not review them here.

On the other hand, we have seen that the expression of meaning is to be constrained by the particular morphosyntax of the language at stake. Consider for example how the meaning contributed by complex denominal verbs like *nail down* or *nail up* is to be expressed in a verb-framed language like Spanish. Two natural translations of these complex denominal verbs are given in (76), whose metaphorical meanings have been omitted here.

- | | | |
|------|--|-------------------------------------|
| (76) | <i>nail down</i> / <i>nail up</i> | English (satellite-framed language) |
| | <i>sujetar con clavos</i> / <i>cerrar con clavos</i> | Spanish (verb-framed language) |

Notice that those translations in (76) are in perfect tune with the verb-framed nature of Spanish noted by Talmy (1985, 1991, 2000): that is, in the Spanish examples the Path/State component is conflated into the verb, while the Manner or Instrument component is syntactically encoded as an adjunct.²³²

To sum up, I have tried to show that it is precisely the verb-framed nature of Romance languages what prevents them from having complex denominal verbs like *nail down*. I have emphasized that a purely semantic approach to the formation of these verbs should not neglect the parametrized variation involved in the different morphosyntactic properties associated to the relevant Path relation. In short, the morphosyntactic distinction between satellite-framed languages vs. verb-framed languages should be incorporated into any adequate model dealing with 'lexical subordination processes'.

3.2.4. Concluding remarks

I have argued that semantic approaches to the formation of complex denominal verbs like those in (56) are descriptively adequate, but cannot provide a principled explanation of why some languages lack them, since they have been shown to neglect the relevant morphosyntactic explanation accounting for the parametrized variation analyzed in section 3.1.

Moreover, I have argued that the preverb in complex denominal verbs like those in (56) is not to be analyzed as a lexical adjunct (Stiebels (1998)). Rather

²³² It is interesting to note that the lexical subordination process involved in *nail down* and *nail up* is also evident in the following paraphrases given by the COBUILD English Learner's Dictionary: 'If you nail something down, you fix it firmly to the floor with nails'; 'If you nail something up, you fix it to a vertical surface using nails'.

following Spencer and Zaretskaya's (1998) analysis of verb prefixation in Russian, I have argued that those complex verbs are better analyzed as instantiations of a 'lexical subordination process'.

3.3. Conflation processes and the locative alternation

The purpose of this section is twofold: on the one hand, I will show that the so-called *aktionsart* effects involved in the locative alternation (cf. Demonte (1991b: chap. 1) and Dowty (1991)) can be argued to be associated to the semantics of the argument structure configurations (cf. section 3.3.2).

On the other hand, I will provide an explanation to the fact that the locative alternation turns out to be much more productive in 'satellite-framed languages' like those included in the Germanic family (English, German, Dutch, etc.), rather than in 'verb-framed languages' like those included in the Romance family (Catalan, Spanish, French, etc.). In particular, I will posit that the relevant morphosyntactic explanation is precisely the very same one that has been shown to be involved when solving the question why Romance languages do not have complex Path of motion constructions like *John danced into the room* nor complex resultative constructions like *The dog barked the chickens awake* (cf. section 3.3.3).²³³

Before providing a relational syntactic and semantic account of the locative alternation, it seems appropriate to provide the useful background that comes from the lexical-semantic approach.

3.3.1. The lexical-semantic approach

As pointed out by Levin (1993: 50), the locative alternation, which is exemplified for Spanish in (77), applies to a set of verbs that involve putting substances on surfaces

²³³ I will not review the very extensive literature on the locative alternation. Such an enterprise would take me too far afield and away from the primary purposes of this section. For relevant discussion on the locative alternation, see Ackerman (1992), Anderson (1971), Baker (1997), Boons (1974), Brinkmann (1997), Croft (1998), Davis (2001), Demonte (1991b: chap. 1), Dowty (1991), Emonds (1991), Farrell (1994), Fillmore (1968), Fraser (1971), Fukui et al. (1985), Herslund (1995), Goldberg (1995), Gropen et al. (1991), Hall (1965), Hoekstra & Mulder (1990), Jackendoff (1990), Juffs (1996), Kipka (1990), Larson (1990), Levin (1993), Levin & Rappaport Hovav (1991), Levin & Rappaport Hovav (1998), Markantonatou & Sadler (1997), Mateu (1997), Moreno Cabrera (1998), Mulder (1992), Munaro (1994), Nwachukwu (1987), Pinker (1989), Rappaport & Levin (1988), Rosen (1996), Sadler & Spencer (1998), Tenny (1994), Tremblay (1991), Van Valin (1993), among others.

or things in containers, or removing substances from surfaces or things from containers.

- (77) a. Juan cargó heno en el carro. (Spanish)
Juan loaded hay on the cart
b. Juan cargó el carro {con/de} heno.
Juan loaded the cart {with/of} hay

For example, in (77a) the locatum argument (*heno* ‘hay’) has been said to be associated to the direct internal argument, the location argument (*carro* ‘cart’) being associated to the indirect internal argument. Alternatively, in (77b) the location argument has been said to be associated to the direct internal argument, the locatum argument being associated to a non-argumental (i.e., adjunct) position (see Rappaport & Levin (1988)).

As Anderson (1971) first observed, the so-called ‘holistic effect’ arises in the variant in (77b), but not in that in (77a). The location is only completely affected when it appears in object position: i.e., (77b) involves that the cart is full, while (77a) need not. Rappaport & Levin (1988) and Pinker (1989) argue that the holistic effect is actually an epiphenomenon of the fact that the verb in (77b) specifies a change of state.

Although the locative alternation has been analyzed by means of a derivational process (e.g., cf. Hall (1965) or Larson (1990) for a transformational approach and Brinkmann (1997) for a lexicalist approach), here I will however argue that the non-derivational approach is the correct one. That is to say, it is not the case that the change of state variant (i.e., that corresponding to (77b)) is to be derived from the change of location variant (i.e., that corresponding to (77a)).²³⁴

²³⁴ There are many non-derivational approaches to the locative alternation in the literature: e.g., Rappaport & Levin’s (1988) or Pinker’s (1989) lexical-semantic approaches, Jackendoff’s (1990) lexical conceptual approach, Tenny’s (1994) lexical-aspectual approach, Mulder’s (1992) syntactic-aspectual approach, Rosen’s (1996) syntactic event-based approach, Munaro’s (1994) syntactic approach, Goldberg’s (1995) constructionalist approach, or Moreno Cabrera’s (1998) logical event-based approach, among others.

According to Levin & Rappaport Hovav (1998: 261), “the locative alternation <cf. (78)> involves two distinct L<exical> C<onceptual> S<tructures> related by a shared constant”, those depicted in (79).²³⁵

- (78) a. The farmer loaded hay on the truck.
 b. The farmer loaded the truck with hay.
- (79) a. [[x ACT] CAUSE [y BECOME P_{loc} z] [LOAD]_{MANNER}]
 b. [[x ACT] CAUSE [z BECOME []_{STATE} WITH-RESPECT-TO y]
 [LOAD]_{MANNER}]

Levin & Rappaport Hovav (1998: 260-261)

Although lexical-semantic accounts have proved quite successful when describing the particular semantic restrictions associated to the present alternation (for example, see Pinker (1989) or Levin (1993) for descriptive lists of alternating and nonalternating locative subclasses), they have proved elusive when constraining the structural part of the relevant semantic representations.²³⁶ For example, consider the more sophisticated semantic analysis of the change of state variant put forward by Pinker (1989: 235), which is depicted in (80).²³⁷

²³⁵ Levin & Rappaport Hovav (1998: 270, fn. 16) point out that “in these representations <(79a-b): JM> we have not associated the constant <(i.e., *LOAD*): JM> with a specific predicate, because *it has proved difficult to determine the exact representation for locative alternation verbs* <(emphasis added: JM)> (See Pinker (1989) and Rappaport & Levin (1988) for two suggestions)”.

It may then be instructive to compare those LCSs in (79) with those postulated by Rappaport & Levin (1988: 26): cf. (i)-(ii) below. According to the latter analysis, the change of state variant depicted in (ii) was argued to involve a ‘lexical subordination process’. Notice that such a hypothesis has been abandoned in their recent LCS analysis in (79b). Unfortunately, Levin and Rappaport Hovav are not explicit in showing the necessity of such a modification. Be this as it may, in section 3.3.3 I will show that the ‘lexical subordination process’ is to be better reserved for those locative alternation cases that are typically absent from ‘verb-framed languages’ like Romance.

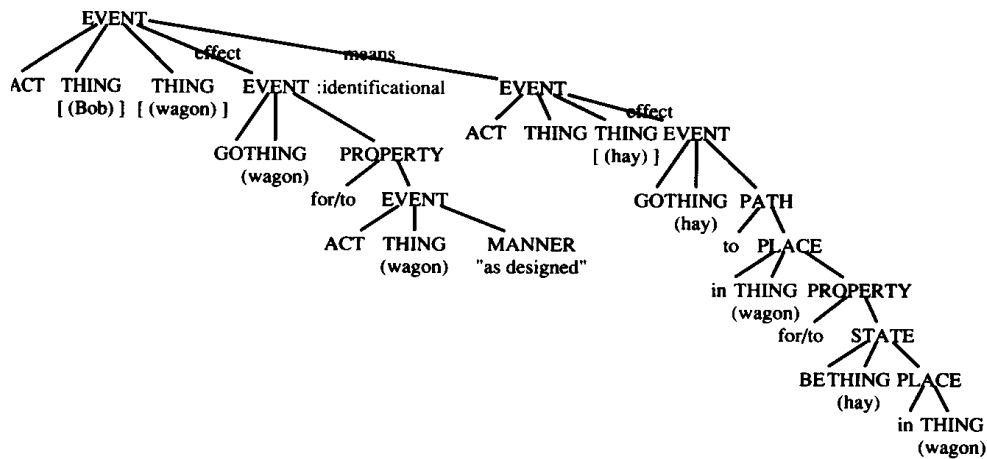
(i) [x cause [y to come to be at z] /LOAD] (cf. (79a))
 (ii) [[x cause [z to come to be in STATE]] BY MEANS OF [x cause [y to come to be at z] /LOAD] (cf. (79b))

²³⁶ For example, this can be checked out if one compares the LCS corresponding to the change of state variant given by Rappaport & Levin (1988) (cf. (ii) in the previous footnote) with that given by Levin & Rappaport Hovav (1998) in (79b).

²³⁷ Pinker (1989: 235) points out that *Bob loaded the wagon with hay* can be glossed as “Bob acted on the wagon, causing the wagon to go into the state of being able to act as it was designed to act, by means of Bob acting on the hay, causing it to go to a place in the wagon intended for hay to be in it”.

According to Pinker (1989: 126), the ‘container verb’ *load* pertains to the following alternating class, which is defined as follows: “A mass of a size, shape, or type defined by the intended use of a container is put into the container, enabling it to accomplish its function”.

(80) Bob loaded the wagon with hay.



Pinker (1989: 235)

Although the structural representation of semantic restrictions given in (80) is descriptively adequate, it is not clear where the constraints of the relevant lexical-semantic decomposition are to be sought. Unlike Rosen (1996), I do not want to deny the cognitive reality of representations such as that depicted in (80), but, as noted above, I tend to agree with Rosen's (1996: 193-4) remarks emphasized in (81).

(81) "Because the verb-class approach neither describes the syntactic facts adequately nor solves the learning problem, I conclude that verb classes do not exist as a cognitive or linguistic organizing mechanism but are instead an epiphenomenon of descriptive work on lexical semantics, argument structure, and verbal alternations. Verb classes are inventions of linguists that describe (in some cases incorrectly) the behavior of verbs. Because work on verb semantics provides us with a descriptive tool that helps us understand the mechanisms that govern verbal behavior, the work on verb classes has been invaluable. However, *verb classes have no explanatory power, and therefore they do not help us understand the computational system* <(emphasis added: JM)>".

Rosen (1996: 193-194)

Given the lack of restrictiveness of lexical-semantic approaches, we appear to be forced to pursue another research trend. In particular, I want to argue that the

theory of argument structure presented in chapter 1 above can tell us a lot with respect to how to constrain the possible thematic structures involved in the locative alternation.²³⁸

3.3.2. *On the relational syntax and semantics of the locative alternation*

Hoekstra & Mulder's (1990) and Mulder's (1992) Small Clause approach to the locative alternation hit the nail on the head when they claim that the locative alternation itself is an optical illusion. Mulder (1992: 177) points out that "the verbs involved typically have SC complements, the internal make-up of which, coupled with the semantics of the embedded predicate, determines which 'alternant' is realized". According to Mulder, the two relevant structures corresponding to the change of location variant and the change of state variant are those depicted in (82a) and (82b), respectively, which are in turn to be regarded as realizations of the same syntactic pattern, that depicted in (82c).²³⁹

- (82) a.Verb [_{SC} NP_{material} PP_{locative}]
 b.Verb [_{SC} NP_{locative} A] (PP_{material})
 c.Verb [_{SC} NP Pred]

Mulder (1992: 178)

To put it in the present terms, I want to argue that the SC projection can be translated into a Path projection headed by a terminal coincidence relation (cf. x_2 in (83)), which relates a Figure to a Place, the latter being headed by a central coincidence relation.^{240,241}

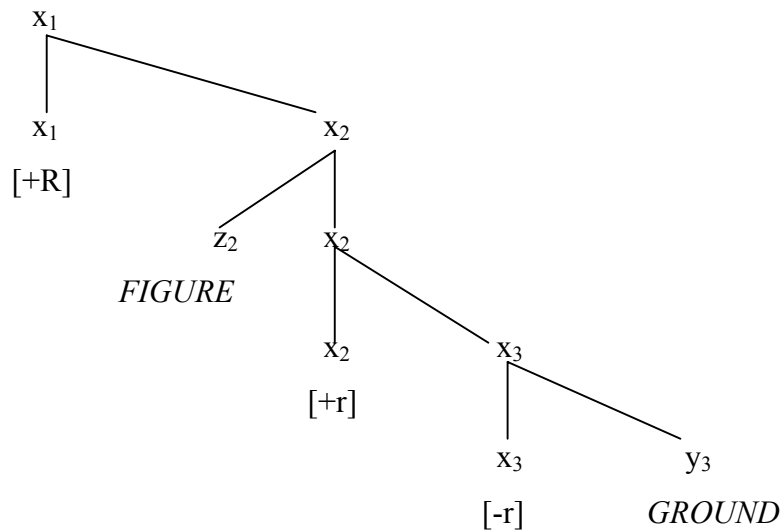
²³⁸ See also Moreno Cabrera (1998) for an alternative proposal as to how to constrain the thematic structures of the locative alternation. For reasons of space, I will not review his event-based approach here.

²³⁹ *A* in (82b) stands for a SC predicate whose meaning is that of expressing 'total affectedness'. See Mulder (1992: 193f.) for arguments that the *with*-phrase in (82b) is an adjunct.

²⁴⁰ Recall that the 'State' component involved in examples like those in (ia)-(iia) below (cf. *OPEN/FULL*) is not to be regarded as a primitive notion of the present theory, but is to be regarded as the derivational result of conflating an abstract Ground into a non-eventive spatial relation (cf. chapter 1 above for the translation of Gruber's (1965) 'Thematic Relations Hypothesis' to the present framework).

- (i) a. The door is open. // The tank is full.
 b. John is in the hall.
 (ii) a. The door opened. // The tank filled (with water).
 b. John went to the hall.

(83)



At first sight, the argument structure in (83) could be said to be problematic, since the central coincidence relation (cf. x_3 in (83)) does not appear to function as a *birelational* element. However, being inspired by Hale & Keyser's (1999b) analysis of the complex preposition *into* in (84a) as a pruned version of the recursive dyadic P-based structure in (84b), I will assume that the argument structure in (83) is actually the "pruned version" of that depicted in (85).²⁴²

²⁴¹ Recall that external argument (i.e., the 'Originator') is to be introduced by the relevant functional projection (e.g., cf. Chomsky (1995); Kratzer (1996)).

²⁴² With Hale & Keyser (1997c), here I use "pruning" with a metaphorical sense, of course. Strictly speaking, it is clear that there is no pruning operation in the computational system. A particular version of their following quote could then be assumed here as well:

(i) "The repeated specifier results, in part, from the general principle according to which the heads involved are inherently dyadic, projecting both a complement and a specifier. The identity of the two specifiers seems to be the effect of a general lexical principle in complex syntactic projections limiting V-internal specifiers to a single chain (...) the specifiers are mutually independent arguments, being projected by distinct prepositions. In any event, only the higher specifier may be overtly realized, and the pair functions as if it were a single argument in the lexical argument structures of verbs built on these projections, e.g., *keep (the baby in bed)*, with a single P-projection specifier, beside *get (the baby into bed)*, with two P-projection specifiers" Hale & Keyser (1997c: 23)

Unless otherwise noted, I will make use of the "pruned" version in order to simplify the discussion.

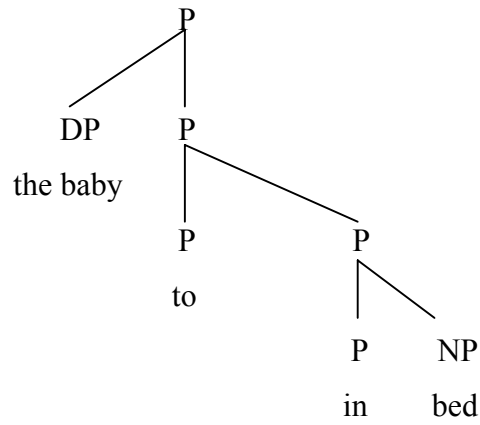
Moreover, I would like to point out that I agree with Hale & Keyser when saying:

(ii) "To pursue the idea that terminal coincidence corresponds to a recursive P-projection, while a central coincidence corresponds to the simplex diadic projection, will require facing some empirical problems. One of these is the fact that certain superficially simple prepositions are terminal, rather than central. The simple preposition *to*, for example, is prototypically terminal -we must assume, therefore, that it is only *apparently* simple, corresponding to something like *to+at*, spelled simply *to*. This is speculative, of course, but we are reduced to speculation in this matter". Hale & Keyser (1997c: 24)

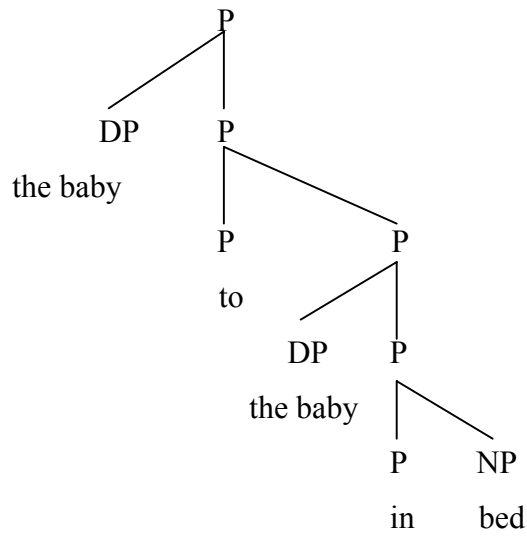
From now on in this chapter I will assume their speculative proposal in (ii) (cf. also Hale & Keyser (2000c) for related discussion). I leave it for future research to show its empirical validity.

(84) Getting [the baby *into* bed] is hard.

a.

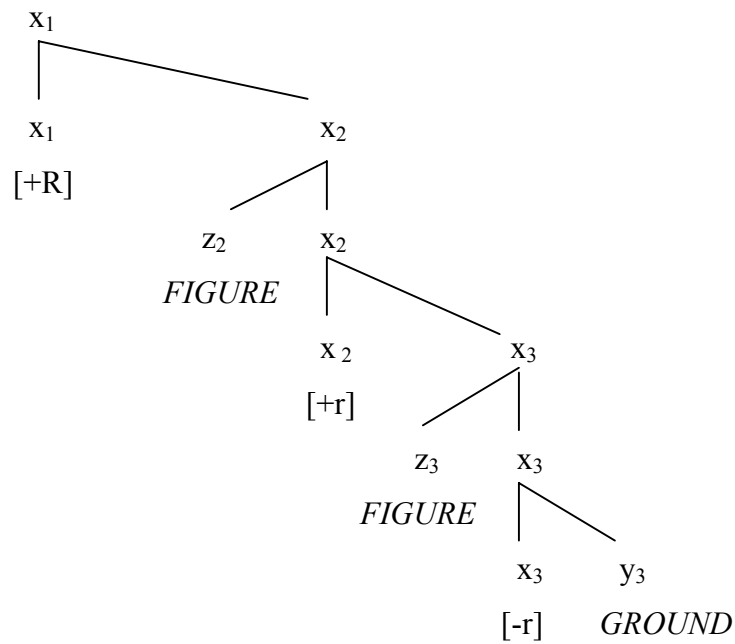


b.



Hale & Keyser (1997c: 22-23; exs. (55)-(56))

(85)



With the previous background in mind, next let us show how the semantics associated to the argument structure in (85) can account for the so-called *aktionsart* effects which have been argued to be involved in the locative alternation (see Demonte (1991b: chap. 1) and Dowty (1991)).

Basically, Demonte's (1991b: 64, ff.) important insight is that the possibility for certain verbs to enter into the locative alternation is not only dependent on their linguistically relevant conceptual composition, but crucially hangs on their *aktionsart* properties as well. According to Demonte (1991b: 68), verbs focusing on the *process* enter into the locative alternation (see the examples in (77), repeated in (86) below). By contrast, she points out that those verbs focusing on the *beginning* (e.g., cf. the verbs *echar* in (87) or *verter* in (88)) cannot partake in the alternation. Finally, she also notes that those verbs expressing the pure *effect* (see the verbs *llenar* in (89) and *adornar* in (90)) do not enter into the alternation either.

(86) a. Juan cargó heno en el carro. (Spanish)

Juan loaded hay on the cart

b. Juan cargó el carro {con/de} heno.

Juan loaded the cart {with/of} hay

(87) a. Juan echó las colillas en el suelo.

Juan threw-out the stubs on the floor

b. *Juan echó el suelo {con/de} colillas.

Juan threw-out the floor {with/of} stubs

(88) a. Juan vertió agua en la jarra.

Juan poured-out water in the jar

b. *Juan vertió la jarra {con/de} agua.

Juan poured-out the jar {with/of} water

(89) a. *Juan llenó agua en el depósito.

Juan filled water in the tank

b. Juan llenó el depósito {con/de} agua.

Juan filled the tank {with/de} water

- (90) a. *Juan adornó cuadros en la habitación.
 Juan adorned pictures in the room
- b. Juan adornó la habitación {con/?de} cuadros.
 Juan adorned the room {with/of} pictures

These contrasts can be argued to receive an adequate structural encoding within the present theory. As noted above, let us assume that the argument structure involved in transitive locative alternation verbs is that depicted in (83/85).²⁴³ Recall that in (85), a causative verb subcategorizes for a birelational Path element, headed by a terminal coincidence relation, which relates a Figure to a Place, the latter being headed by a central coincidence relation, which in turn relates a Figure to a Ground. Assuming Gruber's (1965) 'Thematic Relations Hypothesis', the Ground in (85) can be taken as the physical end point of a change of location (cf. (77a)) or as the abstract end point of a change of state (cf. (77b)).

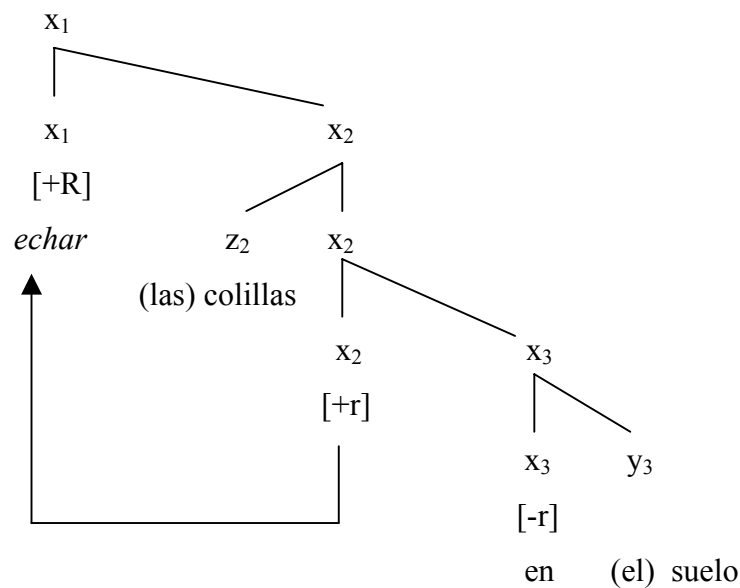
Given this, the ungrammaticality of (87b) and (88b) can be attributed to the fact that the argument structure corresponding to 'beginning verbs' like *echar* 'to throw out' or *verter* 'to pour out' does not contain an abstract Ground expressing the end point of a change of state, but only a physical Ground expressing the end point of a change of location (*suelo* 'floor' and *jarra* 'jar', respectively).

On the other hand, the ungrammaticality of (89a) can be attributed to the fact that two Places (a physical one *en el depósito* , and an abstract one *lleno*) compete for the same argument structure position, i.e., the complement position of the birelational Path element x_2 in (85). However, it is the case that those verbs expressing a pure effect like *llenar* 'fill' are "(causative) verbs of change of state": To put it in the present terms, their argument structure contains an abstract Ground (e.g., *LLENO/FULL*) expressing the end point of a change of state (i.e., $LLENO/FULL = [x_3 \ [[x_3 -r] \ [y \ LLENO/FULL]]]$). So there is no structural room for the physical Place *en el depósito* to be encoded in the argument structure of the verb *llenar* . A similar explanation holds for the ungrammaticality of (90a).

²⁴³ Here I will put aside the intransitive variant of locative alternation cases; see Mulder (1992) for a very accurate analysis of so-called 'swarm-constructions' (e.g., "Bees are swarming in the garden" // "The garden is swarming with bees"). See also Salkoff (1982) and Dowty (2001) for two semantic accounts of this alternation.

This said, let us now deal with the argument structure representation corresponding to ‘beginning verbs’ (e.g., cf. (87a)), that depicted in (91): notice that the formation of the verb *echar* ‘throw-out’ involves the conflation of a terminal coincidence relation into a causative verb. In (91), there is a complex spatial relation relating a Figure *colillas* ‘stubs’ (i.e., the specifier of the terminal coincidence relation x_2) to a Ground *suelo* ‘floor’ (i.e., the complement of the central coincidence relation x_3). The semantic interpretation corresponding to (91) would be something like ‘(Juan) caused the stubs to go onto the floor’.²⁴⁴

(91)



Next let us deal with the argument structure analysis of the change of state variant exemplified in (86b), (89b), or (90b). Assuming the proposal that the State component can be regarded as a locative relation incorporating an abstract Ground (cf. *supra* for my version of Gruber's (1965) 'Thematic Relations Hypothesis'), the argument structure corresponding to the change of state variant exemplified in (89b), can be argued to be that depicted in (92):²⁴⁵ x_2 and x_3 are headed by a terminal

²⁴⁴ Recall that, with Harley (1995) and Hale & Keyser (1998f.), I assume that the motion predicate (*GO* ; my $[+T]$) is not represented in transitive argument structures like that in (91a). Presumably, both the causative verb *plus* the telic directional element x_2 could be argued to provoke such an interpretive effect.

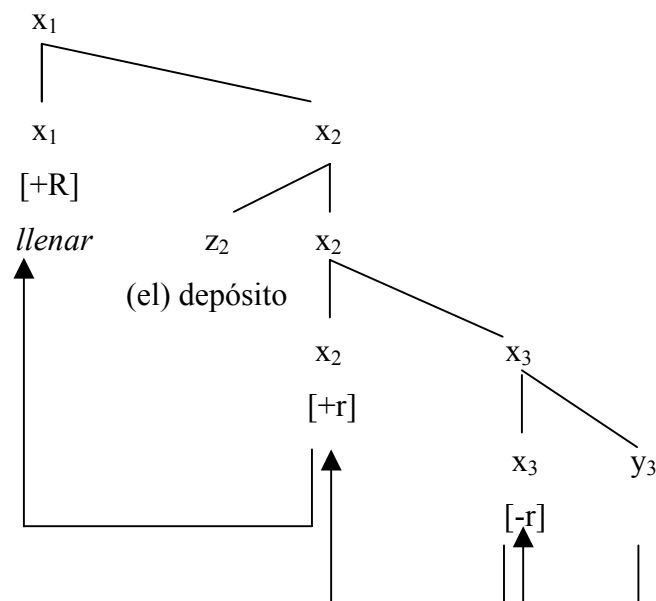
Note also that, for expository reasons, in (91) I have made use of the "pruned" version of the complex non-eventive relation (cf. *supra*).

²⁴⁵ The argument structure in (92) is also valid for the examples in (86b) and (90b). Once again I have made use of the "pruned" version to simplify the exposition (cf. *supra*).

coincidence relation and a central coincidence relation, respectively. Moreover, y_3 is the non-relational element expressing an abstract Ground. Accordingly, States like that encoded by *lleno* ‘full’ lack primitive status in the present framework: they are argued to involve conflation of a non-relational element (i.e., an abstract Ground y_3) into an locative relation x_3 .

Furthermore, the semantic interpretation corresponding to (92) would be something like ‘(Juan) caused the tank to go into the state of *full*’.

(92)



Given (92), notice the so-called *with*-phrase turns out to be an adjunct since there is no structural space for it in the basic argument structure. Quite interestingly, Mulder (1992: 193ff.) provides some relevant arguments in favor of the adjunct status of the *with*-phrase. For example, he shows that this phrase can be extraposed in Dutch, is omissible (see (93a)), and can be clefted (see (93b)), these facts arguing against its alleged argument status.

- (93) a. dat hij de tuin beplant (met tulpen). (Dutch)
 that he the garden BE-plants (with tulips)
 b. hij beplant de tuin en doet dat met tulpen.
 he BE-plants the garden and does that with tulips

Mulder (1992: 197; ex. (83))

On the other hand, as noted in section 1.2 above, in Romance languages the preposition introducing the so-called locatum object in the change of state variant can be the preposition corresponding to the English *with* or the partitive preposition corresponding to the English *of* (as in *the truck is full of bricks*). As can be inferred from the Catalan data in (94), the central coincidence relation *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 (see (94d)), nor is to be found coappearing with a true instrumental (see (95b)).

- (94) a. El Pep carregà el camió de totxos. (Catalan)
the Pep loaded the truck of bricks
- b. El Pep carregà el camió amb totxos.
the Pep loaded the truck with bricks
- c. Aquest camió està {molt carregat/carregadíssim} de totxos.
this truck perf.be.3rdsg very loaded/loaded-superlat. of bricks
- d. ??Aquest camió està {molt carregat/carregadíssim} amb totxos.
this truck perf.be.3rdsg very loaded/loaded-superlat. with bricks
- (95) a. El Pep carregà el camió de totxos amb la grua.
the Pep loaded the truck of bricks with the crane
- b. ??El Pep carregà el camió amb totxos amb la grua.
the Pep loaded the truck with bricks with the crane

Furthermore, the semantic difference between those two prepositions also explains why (96a) is ambiguous, while (96b) is not: (96a) can be associated to two readings, (i) the ergative one (i.e., that corresponding to *The tank filled with water*) and (ii) the agentive one (i.e., that corresponding to *The tank was filled with water*), while (96b) can only be associated to the latter interpretation.²⁴⁶

²⁴⁶ The agentive reading corresponds to the so-called “pronominal passive” (see Bartra (2002)). See also Pascual (1999, 2001) for a minimalist analysis of the instrumental PP.

- (96) a. El dipòsit s'omplí d'aigua. (Catalan)
 the tank SE-filled of water
 b. El dipòsit s'omplí amb aigua.
 the tank SE-filled with water

Once presented the argument structure analysis of the so-called 'locative alternation', let us now deal with the interesting observation that can be expressed in Talmy's (1991) typological terms: i.e., quite typically, the locative alternation is much more productive in so-called 'satellite-framed languages' like those included in the Germanic family (English, German, Dutch, etc.), rather than in so-called 'verb-framed languages' like those included in the Romance family (Catalan, Spanish, French, etc.).²⁴⁷

3.3.3. *Lexicalization patterns and the locative alternation*

First of all, it is important to point out that here I will concentrate on the *systematic* differences accounted for by Talmy's (1991) typological distinction. For example, I am interested in working out an explanation to why 'verb-framed languages' like those of the Romance family do not typically present the kind of locative alternation exemplified in (97), (98) or (99), which can be found in a 'satellite-framed' language like English.

- (97) a. The children taped pictures on the wall.
 b. *The children taped the wall with pictures.
 c. The children taped *up* the wall with pictures.
- (98) a. Gertrude sewed buttons on the dress.
 b. *Gertrude sewed the dress with buttons.
 c. Gertrude sewed *up* the entire dress with buttons.

²⁴⁷ Beth Levin has pointed out to me that an accurate descriptive work showing such a productivity difference is necessary if I want to provide this observation with a solid empirical basis. Granted, she is right but I think that my observation is valid: from a mere cursory look at works like Levin (1993), Brinkmann (1997) or Mulder (1992), I realized that the locative alternation in English, German or Dutch is much more productive than in my native language (Catalan). On the other hand, Demonte (1991b: 64) already noticed that the locative alternation is not a productive alternation in Spanish.

- (99) a. Bill wound tape around the pencil.
 b. *Bill wound the pencil with tape.
 c. Bill wound *up* the pencil with tape.

Rosen (1996: 206-207; exs. (35)-(38))

Since I am interested in systematic contrasts related to Talmy's typology, here I will not be concerned with non-systematic facts like, for instance, the fact that the verb *pour* does enter into the locative alternation in German, but does not in English: cf. (100c) with (101b).²⁴⁸

- (100) a. Bill poured water into the glass.
 b. *Bill poured the glass with water.
 c. *Bill poured *up* the glass with water.

- (101) a. John goss Wasser über die Blumen. (German)
 John poured water over the flowers'
 b. John begoss /übergoss die Blumen mit Wasser.
 John BE-poured/over-poured the flowers with water'

Rosen (1996: 209/211; exs. (46)-(48a)-(52))

Similarly, I will not be concerned here with lexical differences like those involved in the alternation in (102) (vs. cf. the Spanish data in (89) above). Quite probably, the fact that *fill* alternates in Chinese or German, but not in English or Spanish has nothing to do with Talmy's typological distinction, but with the idiosyncratic semantic restrictions associated to the particular lexical item at stake.²⁴⁹ As far as I can see, no general explanation can be given to the idiosyncratic fact that *fill* alternates in German or Chinese, but not in English or Spanish. One could then

²⁴⁸ According to Rosen (1996: 209-211), "(...) not only does *pour* resist the location-object frame, the addition of a verb particle provides no help in specifying the location as a delimiter" (...) <By contrast, in German> "it appears that the prefix on *giessen* is similar in function to the particle *up* in English: it changes the aspectual interpretation of the verb, allowing the location to be fully affected".

²⁴⁹ According to Rosen (1996: 211), "(...) *Zhuang* does not necessarily encode the fullness of the container as does English *fill*. (...) It appears that *füllen* permits either alloframe because its lexical representation lacks a fullness specification on its location argument (...) Languages vary the most in their lexicons, and translation is only approximate".

speculate that those English speakers that accept (103) or those English children saying something like (104a) appear to follow the lexical semantic restrictions of the verb *fill* that hold in Chinese or German, but not in English.

- (102) a. Wo ba shue zhuang zai pinzi li. (Chinese)
 I BA water fill at bottle inside
 ‘I have filled the bottle with water.’
- b. Wo ba pinzi zhuang le shue.
 I BA bottle fill ASP water
 ‘I have filled the bottle with water.’
- c. John füllte Wasser in das Glass. (German)
 John filled water in the glass
- d. John füllte das Glass mit Wasser.
 John filled the glass with water
- Rosen (1996: 211; exs. (50)-(51))

- (103) Take a little of the mixture at a time and fill it into the zucchini.
 Rosen (1996: 210; ex. (49))

- (104) a. E, 5;0 Can I fill some salt into the bear? [fill a bear-shaped salt shaker with some salt]
- b. E, 2;11 Pour, pour, pour. Mommy, I poured you. [Waving empty container near M. M: You poured me?] Yeah, with water.
 Bowerman (1981), *apud* Pinker (1989: 26)

With the previous remarks in mind, let us return to our main point: a cursory look at Levin (1993: 50f.), Mulder (1992: 166f.) or Brinkmann (1997) made me realize that the locative alternation is much more productive in the Germanic languages rather than in the Romance ones.

As noted above, Talmy (1985, 1991, 2000) pointed out that one of the most visible differences between satellite-framed languages like English, and verb-framed languages like Spanish, is that only the former languages allow both components Manner and Path to be expressed in a single clause. Quite interestingly, we can find some effects of Talmy's typological distinction when studying a productive class of

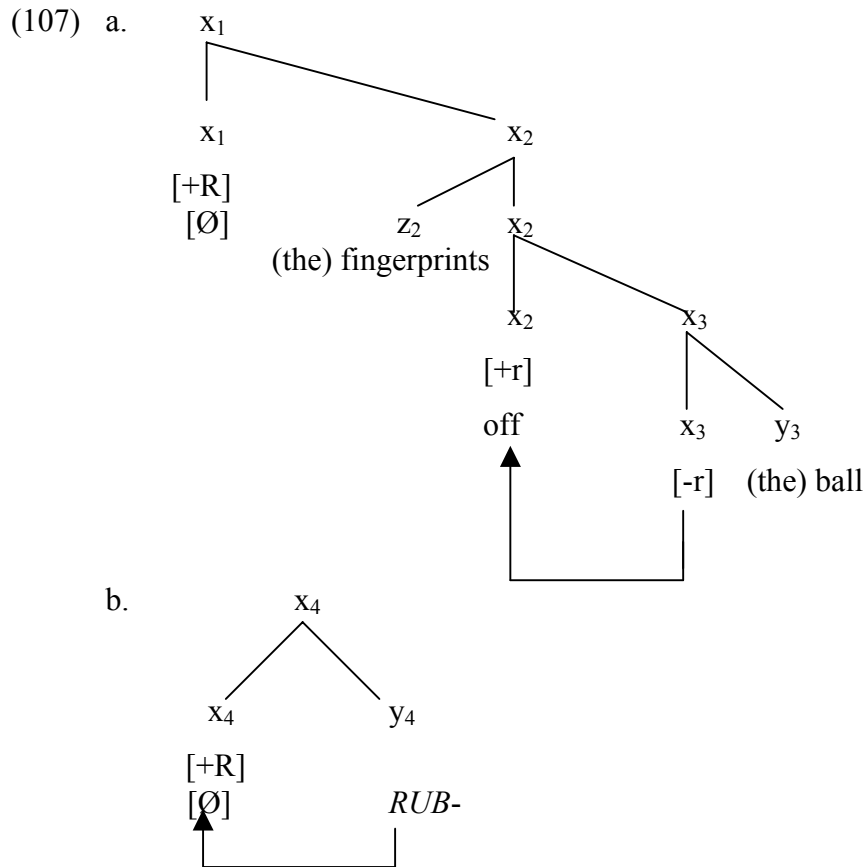
locative alternation cases that can be typically found in satellite-framed languages like English, but not in verb-framed languages like Spanish. For example, consider the relevant contrast between the English examples in (105) and their Spanish counterparts in (106).

- (105) a. Joe rubbed the fingerprints off the crystal ball.
 b. Joe rubbed the crystal ball.
- (106) a. *Joe frotó las huellas fuera-de la bola de cristal. (Spanish)
 Joe rubbed the fingerprints off the ball of crystal
 a'. Joe quitó las huellas de la bola_i frotándola;
 Joe got+*out* the fingerprints from the ball rubbing-it
 b. Joe frotó la bola de cristal.

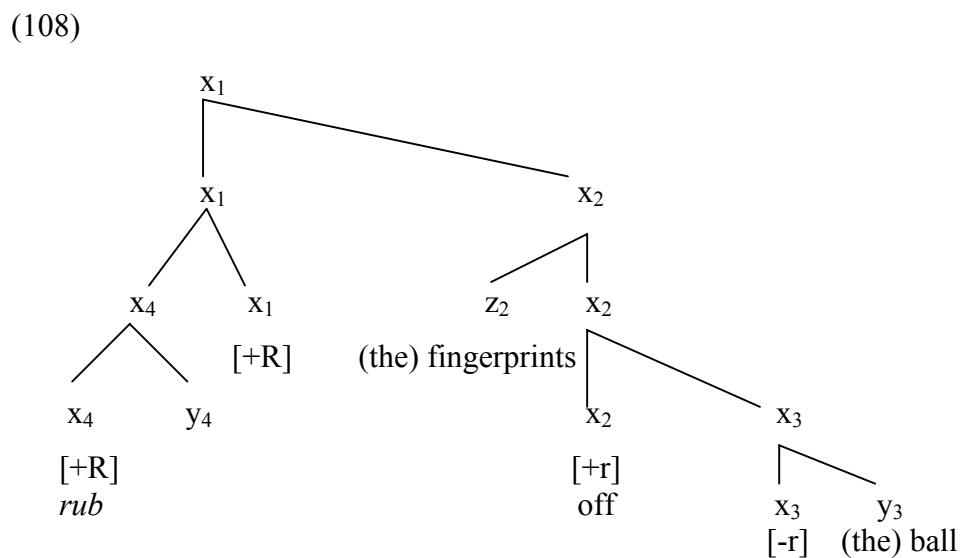
Let us deal with the argument structure analysis of the relevant contrast. Firstly I will analyze the complex argument structure of (105a), and secondly I will deal with the simple one corresponding to both (105b) and (106b), the latter examples being assigned the very same argument structure.

The main argument structure associated to (105a) is that depicted in (107a).²⁵⁰ In accordance with the satellite nature of Path in English, the directional element *off* does not saturate the phonologically null matrix of the main eventive head. So in order for such an empty matrix not to provoke legibility problems at PF, two steps are required: first we must select an independent argument structure object from the numeration (for example, that represented in (107b)); secondly we must conflate it into the null main eventive head in (107a).

²⁵⁰ For the sake of exposition, notice that once again I make use of the "pruned" version (cf. *supra*). Moreover, recall that the external argument (i.e., *Joe*) is to be introduced by the relevant functional projection (cf. Chomsky (1995) and Kratzer (1996), a.o.).

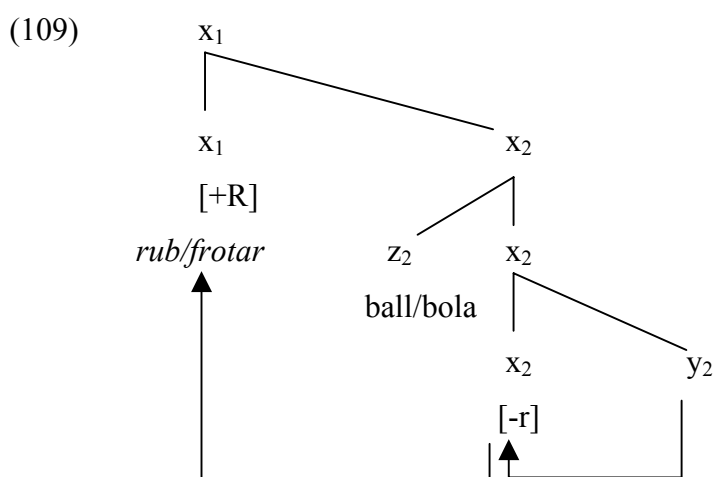


Once again I want to claim that that the subordinate argument structure object encoded in *rub*, which expresses Talmy's 'Manner constituent', turns out to be conflated into the main eventive head of (107a) via a 'generalized transformation': see (108) for the resulting derivation, where this operation has been represented via an adjunction process of (107b) into the null eventive head of (107a).



By contrast, in verb-framed languages like Spanish the directional element is lexically conflated into the main eventive head (see (106a)); notice that *quitar* ‘to get out’ is an atom as far its morphophonological status is concerned: that is to say, what corresponds to the verb and what corresponds to the telic directional relation cannot be distinguished any longer. As a result of this lexical saturation, if we are willing to express a Manner component, this must appear in an adjunct position, as noted by Talmy (1985): see (106a’).²⁵¹

Let us now analyze the simple argument structure (105b) or (106b). Being inspired by Hale & Keyser’s (1999b) analysis of predicates like *kick the ball*, I want to argue that the argument structure of (105b) is that depicted in (109): *to rub the ball* as *give it a rub*, i.e., *provide the ball with a rub*. Accordingly, the birelational element x_2 in (109) is to be regarded as a locative relation expressing ‘central coincidence’.



²⁵¹ At first glance, there appear to be counterexamples to the generalization that Romance languages do not allow locative alternation cases like that exemplified in (105). For example, consider the Spanish verb *barrer* (‘to sweep’), which enters into the following alternation in (i)-(ii) (other Spanish verbs that also partake in this alternation are *fregar* (‘to wipe’) or *limpiar* (‘to clean’)).

- (i) Juan barrió el suelo. (Spanish)
 John swept the floor
- (ii) Juan barrió las migas restantes del suelo.
 John swept the crumbs remaining from-the floor

However, a closer look at contrasts like that in (i)-(ii) reveals that this alternation is not to be equated with the English one depicted in (105). It is important to notice that the location can be omitted in the Spanish example in (ii), such an omission being fully impossible in English: **John swept the crumbs*. Quite interestingly, I think that the *raison d’être* of this contrast is to be found once again in Talmy’s (1985, 1991, 2000) typological distinction: It is the case that in (ii) the verb *barrer* is interpreted as a Path verb like that in (106a’): i.e., *Juan quitó las migas (del suelo)* (lit. ‘Juan got+out the crumbs of the floor’). In English such an interpretation is not possible, since in this satellite-framed language the Path is not conflated into the verb. As a result, unlike its Spanish counterpart *barrer*, *sweep* can never be interpreted as a ‘Path verb’.

- b. Die Vandalen bespritzten das Auto mit Farbe
the vandals BE-sprayed the car with paint

Brinkmann (1997: 69; ex (48))

On the other hand, a very interesting problem is that concerning the apparent optionality of the perfectivizing prefix in the change of state variant of some locative verbs (see (112b) and (113b)).²⁵⁴ My provisional proposal is that the unprefixated variant of the change of state variant is to be analyzed as their Romance counterpart in (77b), while the prefixed variant is to be analyzed as involving a lexical subordination process: that is to say, the unprefixated variant can be paraphrased as 'He caused the wagon to become loaded', while the prefixed variant means something like 'He caused the wagon to be totally affected by means of loading'. Notice that this mere description can account for the fact that a resultative phrase with the meaning of 'total affectedness' (e.g., *vol*) is not compatible with the prefixed variant (cf. (112c)): 'He caused the wagon to become full (*ergo*, totally affected) by means of loading'.

- (112) a. Hij laadde het hooi op de wagen (Dutch)
he loaded the hay on the wagon
b. Hij (be-)laadde de wagen met hooi
he BE-loaded the wagon with hay
c. Hij (*be-)laadde de wagen vol met hooi.
he loaded the wagon full with hay

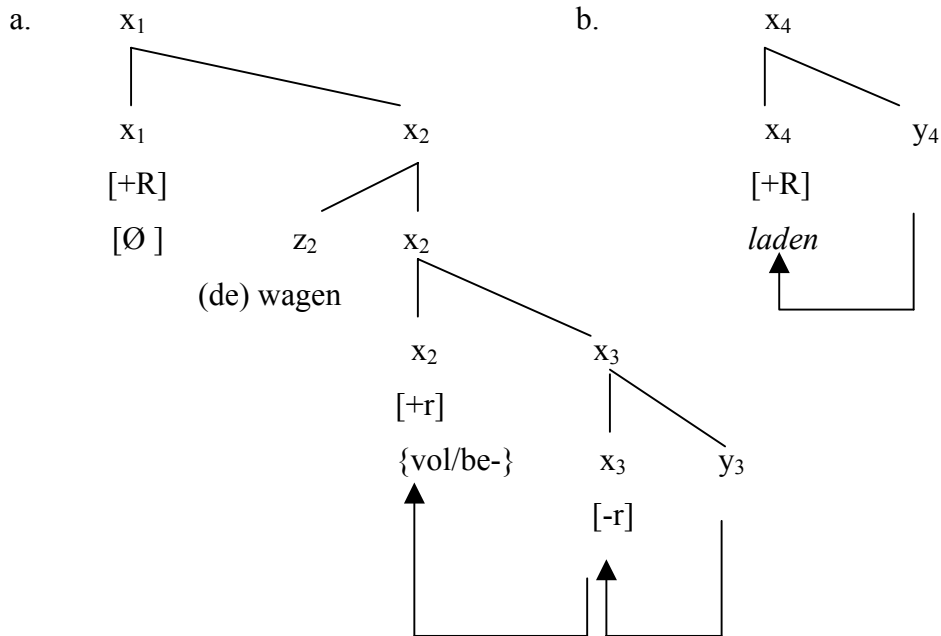
Mulder (1992: 178-179; ex. (36)-(42a))

- (113) a. Sie luden Heu auf den Wagen (German)
they loaded hay onto the wagon
b. Sie (be-)luden den Wagen mit Heu
they (BE-)loaded the wagon with hay

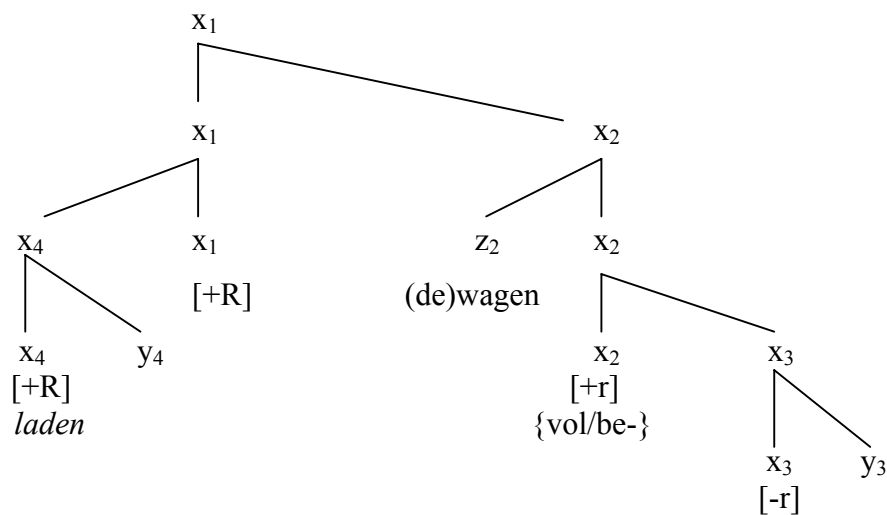
Accordingly, while the unprefixated variant of (112b) (and (113b)) is to be analyzed as Sp. *Él cargo/llenó el vagón con heno* 'He loaded/filled the wagon with hay' (cf. (92) above), the prefixed variant can be argued to involve the very same

conflation process as that corresponding to a complex resultative construction (cf. *He loaded the wagon full*): that is, the two argument structures in (114) turn out to be conflated, the resulting complex argument structure being depicted in (115).

(114)



(115)



Finally, I would like to conclude this section with an important caveat: as noted above, "typologies leak". It should then be clear that typologies cannot be stated across-the-board. For example, Italian could also be argued to behave as a satellite-framed language in the following (b) examples drawn from Munaro (1994): as in the

²⁵⁴

Cf. Mulder (1992: 180f.) and Brinkmann (1997: 68f.) for the optionality of BE-prefixation.

change of state variants of (110b) and (111b) above, notice that what corresponds to the prefix and what corresponds to the verb can be easily distinguished in (116b), (117b), and (118b); given this, the satellite element, i.e., the prefix, could be argued to encode the result component, this accounting for Munaro's *funzione perfettivizante* ('perfectivizing function'),²⁵⁵ whereas the verb can be argued to encode the Manner component.

- (116) a. Gianni ha fornito merce avariata a Paolo. (Italian)
 Gianni has provided merchandise damaged to Paolo
 b. Gianni ha rifornito Paolo di merce avariata.
 Gianni has RI-provided Paolo of merchandise damaged
- (117) a. spargere sale sul tavolo
 spread salt on-the table
 b. cospargere il tavolo di sale
 CO-spread the table of salt
- (118) a. seminare cartacce sul prato
 spread gravel on-the field
 b. disseminare il prato di cartacce
 DIS-seminate the field of gravel

3.4. Conclusions

The main general conclusions we have arrived at in the present chapter can be briefly summarized as follows: Talmy's (1991, 2000) distinction between 'satellite-framed languages' and 'verb-framed languages' has been shown to be crucial when accounting for the crosslinguistic variation involved in the so-called 'elasticity of verb meaning' (Rappaport Hovav & Levin (1998)). Unlike semanticocentric approaches, I have taken pains to show that it is morphosyntax that plays an important role when dealing with the relevant crosslinguistic variation: in particular,

²⁵⁵ According to Munaro (1994: 367-368), "il verbo compare con un prefisso che possiamo supporre abbia, anche qui, una funzione perfettivizante (...) solo gli esempi (b) implicano una certa intenzionalità-causalità da parte del soggetto nel compiere l'azione e soprattutto la completezza del processo di trasferimento".

basing myself on (i) the fact that the morphosyntactic properties associated to what Talmy refers to as Path relation can be shown to vary across languages, and (ii) the assumption that the relevant parametrized variation cannot be explained in *purely* semantic terms, here I have concentrated on showing that the present theory of argument structure, which takes both the (morpho)syntax and semantics of argument structure into account, can explain why Romance languages (and more generally, verb-framed languages) typically lack (i) complex telic Path of motion constructions like *John danced into the room*, (ii) complex resultative constructions like *The dog barked the chickens awake*, (iii) complex "phrasal" verbs like *nail down* or (iv) locative alternation cases like *Joe rubbed the fingerprints off the crystal ball / Joe rubbed the crystal ball clean of fingerprints*, among other satellite-framed constructions.

Chapter 4. Arguing our way to the *Direct Object Restriction* on resultative constructions

Drawing heavily on Hoekstra's (1988, 1992) work on so-called 'Small Clause Results' and Marantz's (1992) work on the *way*-construction and its relation to resultative constructions, in this chapter I argue my way to the conclusion that the so-called 'Direct Object Restriction' (DOR) on resultatives must be regained, despite Rappaport Hovav & Levin's (2001) claims to the contrary. In section 4.1 I review some of the main properties of resultative constructions that appear to motivate the syntactic approach, whose main tenet is the DOR. In particular, I show that the present analysis of the conflation process involved in the formation of resultatives allows us to offer a more adequate explanation of their syntactic properties than Levin & Rappaport Hovav's (1995) one. In section 4.2. I put forward a relational syntactic and semantic analysis of the so-called *way*-construction. After reviewing Jackendoff's (1992, 1997) and Goldberg's (1995) semantic approaches, I show that the present analysis help us understand why the DOR holds for this idiomatic resultative-like construction as well. In section 4.3. I deal with some exceptional cases put forward by Verspoor (1997) and Wechsler (1997), which appear to contradict the DOR. Finally, in section 4.4 I briefly summarize the main conclusions.

4.1. On the DOR on resultative constructions

The basic tenet of a number of syntactic accounts of the English resultative construction is an important generalization concerning the distribution of resultative XPs:²⁵⁶ result XPs in English are invariably predicated of NPs in object position,²⁵⁷ whether or not these NPs are arguments of the verb heading the construction. Levin

²⁵⁶ Levin & Rappaport Hovav (1995: 34) define a resultative phrase as follows: "It is an XP that denotes the state achieved by the referent of the NP it is predicated of as a result of the action denoted by the verb in the resultative construction".

²⁵⁷ Recall that such a descriptive statement is to be translated into a more explanatory one in the context of Hoekstra's (1988, 1992) theory of Small Clauses: i.e., result XPs are invariably predicated of inner subjects of a Small Clause (cf. chapter 3 above for my adaptation of his theory to the present framework; cf. also Mateu (2001c) for relevant discussion.

& Rappaport Hovav (1995) called this generalization the *D(irect) O(bject) R(estriction)*.

For example, the minimal pair in (1) is nicely explained by the DOR. Clearly, (1b) cannot mean that John got tired as a result of hammering on the metal. If anything, *tired* is interpreted as a depictive predicate: i.e., John hammered on the metal when he was tired.

- (1) a. John hammered the metal flat.
b. *John hammered the metal tired (*on the resultative reading)

More interestingly, Levin & Rappaport Hovav (1995) argued that contrasts like those in (2) support the syntactic encoding of unaccusativity in English.²⁵⁸

- (2) a. John laughed *(himself) silly.
b. The metal_i was hammered *t*_i flat.
c. The garage door_i rumbles *t*_i open²⁵⁹
d. The river_i froze *t*_i solid.

The verbs in (2c-d), which may have result XPs predicated directly of their subjects, are said to be unaccusative, their surface/derived subjects being analyzed as underlying objects. The same holds for the example (2b), since the passive is analyzed as an unaccusative construction. By contrast, those verbs that cannot have result XPs predicated directly of their subjects are unergative, requiring reflexive pronouns as objects to satisfy the DOR (e.g., cf. (2a)). Following Simpson (1983), Levin & Rappaport Hovav (1995: 35) pointed out that "the fake reflexive NP could be viewed as a syntactic device for allowing a resultative phrase to be interpreted as if it were predicated of the subject of an unergative verb, while still conforming to the DOR".

²⁵⁸ For other syntactic approaches to the resultative construction and its relation to the *Unaccusative Hypothesis*, see Simpson (1983), Hoekstra (1984, 1988), Bresnan & Zaenen (1990), among others.

But see Li (1990), Huang (1992), Kim & Maling (1997), among others, where the DOR has been called into question for other languages (e.g., Chinese, Korean, Finnish, etc.). See also Zhang (2001) for relevant discussion on the Chinese data and the DOR.

²⁵⁹ The example (2c) is taken from Rappaport Hovav & Levin (2001: 768; ex. (5b)).

On the other hand, Levin & Rappaport Hovav (1995) appealed to the Case theory in order to explain the contrast between (3a,b) and (3c,d): the postverbal NPs in (3a,b) receive Case from the unergative verb (cf. Burzio (1986)), and a semantic role from the result XP (cf. Hoekstra (1988)). By contrast, unaccusative verbs are not found in the 'nonsubcategorized NP intransitive-based pattern', as they are not Case-assigners.

- (3) a. The dog barked the chickens awake.
 b. They talked us into a stupor.
 c. *The river frozed the fish dead.
 d. *The ice melted the floor clean.

However, Rappaport Hovav & Levin (2001) have recently claimed that all those previous syntactic explanations can be said to vanish into thin air because of the existence of examples like those in (4), where the telic directional XP is apparently predicated of the subject NP. Quite crucially, these examples have led them to abandon the main tenet of their syntactic approach, i.e, the DOR:²⁶⁰ drawing mainly on data from Wechsler (1997) and Verspoor (1997), Rappaport Hovav & Levin (2001) argue that their 1995 syntactic approach to resultatives must be abandoned in favor of their 2001 non-syntactic event structure account.²⁶¹

²⁶⁰ In their previous syntactic approach Levin & Rappaport Hovav (1995: 35) acknowledged that "we are not aware of any counterexamples to the DOR that involve transitive verbs".

²⁶¹ Basically, see Rappaport Hovav & Levin's (2001: 784-790) section 4: "*Which argument of a transitive verb is the result XP predicated of*". Their event structure account is based on two important generalizations:

- (i) The result XP is predicated of the NP denoting the argument of a transitive verb which is the recipient of a transmitted force, if there is one.
 (ii) When there is no NP denoting an entity which is the recipient of a transmitted force, the result XP is free to be predicated of the subject.

It is then the case that NPs denoting entities which are recipients of transmitted force are usually expressed as direct objects (cf. Croft (1991)), which is why most of resultatives based on transitive verbs involve results XPs predicated of direct objects, as implicitly encoded in the DOR. This notwithstanding, when a transitive verb does not describe the transmission of force towards the entity denoted by its object, a result XP can be predicated of its subject (cf. (4)).

Furthermore, they point out that "the force recipient approach receives support from the observation that verbs whose objects are incremental themes, but not force recipients (e.g., *memorize, study, read, sing*) cannot appear with object-predicated result XPs" (p. 790). However, notice that there is an important flaw of their account here: their analysis appears to predict that sentences containing these verbs should be possible with subject-predicated result XPs. For example, as it stands, their analysis appears to predict that examples such as those in (iii) should be ok, contrary to fact:

- (iii) a. * They_i read somniferous poems asleep;
 b. *They_i sang somniferous songs asleep;

Indeed, their following prediction turns out to be not empirically accurate: "(...) with

- (4) a. The wise men followed the star out of Bethlehem.
 b. The sailors managed to catch a breeze and ride it clear of the rocks.
 c. John danced mazurkas across the room.
 d. The children played leapfrog across the park.

Exs. (a,b) from Wechsler (1997); exs. (c,d) from Verspoor (1997), *apud* Rappaport Hovav & Levin (2001: 770)

Contra Rappaport Hovav & Levin's (2001) claims, in section 4.3 below I will argue that the incompatibility of the exceptional data in (4) with the DOR is merely illusory because even these examples in (4) can be shown to be compatible with the DOR. In particular, following an insightful suggestion by two referees of Rappaport Hovav & Levin (2001), I will argue that Verspoor's examples in (4c,d) can be provided with the same relational syntactic and semantic analysis that can be applied to a resultative-like construction, namely, the *way*-construction (cf. (5)), where the directional PP is also apparently predicated of the subject NP, contrary to the DOR again (cf. section 4.2 below). Alternatively, these examples in (4c,d) could also be argued to involve adjunct PPs (den Dikken (p.c.); McIntyre (2002)). Concerning Wechsler's (1997) *follow*-type sentences, I will show that there is evidence for considering the relevant problematic examples as unaccusative constructions (cf. section 4.3). All in all, it will turn out to be that the validity of the DOR-based approach to English resultatives must be regained.

- (5) a. Morris joked his way into the meeting.
 b. Bill elbowed his way through the crowd.
 c. Jim moaned her way out of the room.
 d. Paco fandangoed his way into the hall.
 e. Pat slept her way to the top.

noncanonical transitive verbs, which lack an NP denoting an entity that is the force recipient, the result XP is free to be predicated of the subject". This prediction appears to be correct for the exceptional examples in (4), but *not* for examples like the ones in (iii).

All in all, the relevant conclusion seems then to be that, despite Rappaport Hovav & Levin's (2001) insights concerning the event structure semantics of resultatives, the syntactic restriction (i.e. the DOR) turns out to be necessary to avoid cases like those in (iii). This accepted, the next step is to try to explain why the exceptional data in (4) appear to violate the DOR. As will be argued in section 4.3 below, this is not *necessarily* the case since there are still two ways that can be worked out in order to explain them: (i) the result XPs in (4) are adjuncts (e.g., cf. *John danced mazurkas [to (the point of) exhaustion]*) or (ii) they are SC predicates (e.g., cf. *John danced [his way across the U.S.]*). Note that the former possibility is not to be discarded (cf. Andrew McIntyre (2002) for relevant discussion). Were that the case, it is clear that the DOR would be trivially regained.

Putting the apparent counterexamples in (4)-(5) aside momentarily, next I will show that Levin & Rappaport Hovav's (1995) syntactic explanations reviewed above are not adequate enough. It should be clear that the validity of the DOR does not necessarily depend on one's assuming Levin & Rappaport Hovav's (1995) syntactic approach. To be sure, there is room for other proposals compatible with the DOR. I will devote the remainder of this section to developing my account of the relevant contrasts in (2-3) above.

To start with, one caveat is in order here: the very obvious fact that there are lexical conceptual restrictions associated to those resultative-like constructions under study (cf. Jackendoff (1990f.), Goldberg (1995) or Wechsler (1997), among others) should not to be regarded as incompatible with my relational syntactic and semantic analysis. Here I want to stress the latter point since I do not want to argue that examples like the one in (6b) are to be ruled out by virtue of the DOR (*contra* Simpson (1983) or Levin & Rappaport Hovav (1995), among others). As far as their syntax is concerned, my claim is that those examples in (6) are to be analyzed as those in (7): that is, all those examples in (6) and (7) would involve a syntactic conflation process of a subordinate unergative head into a phonologically null main unaccusative head (cf. section 3.1.3. above).

- (6) a. # John laughed into the room.
b. # John laughed silly.
- (7) a. John danced into the room.
b. The garage door rumbles open.

That is, I want to claim that the lexical conceptual differences between *laugh*, *dance* or *rumble* are fully opaque to the syntactic operation, i.e., the conflation process: what is actually important is that all of them are unergative verbs. Accordingly, the oddity of those examples in (6) should not be due to a syntactic reason, but rather to a lexical conceptual one. In principle I would have no problem with accepting Wechsler's (1997) semantic account of the oddity of an example like *#The dog barked hoarse*:

- (8) a. Canonical Result Restriction (CRR)
 A control resultative must represent a ‘canonical’ or ‘normal’ result state of an action of the type denoted by the verb.
- b. “**The dog barked hoarse* is bad because hoarseness is not the canonical result of barking –indeed there probably is no canonical result of barking. *The dog barked itself hoarse* is acceptable because it is not a control resultative, so this restriction does not apply <according to his terminology, the latter is an E(xceptional) C(ase) M(arking) resultative: JM>.”

Wechsler (1997: 310)

There also appears to be an intuitive conceptual explanation of the contrast between the examples in (6) and (7): manner of motion verbs like *dance* or verbs of sound like *rumble* can be argued to partake in an intrinsic relation with the inherently directed motion event involved in the unaccusative construction, while verbs like *laugh* cannot. This notwithstanding, as noted above, I want to claim that restrictions of this sort do not affect the syntactic computation of examples like those in (6). Accordingly, I propose that sequences like those in (6) are freely generated by the computational system, their anomaly being detected in the interpretive semantic component (or alternatively, in Marantz's (1997) encyclopedic component).

Given this, notice that my recognizing that it is not syntax that is involved in explaining the oddity of those examples in (6) and that in (8b) does not prevent me from positing a basic unaccusative structure for them. In other words, I do not accept Wechsler's (1997) claim that unaccusativity is not involved in (7).²⁶²

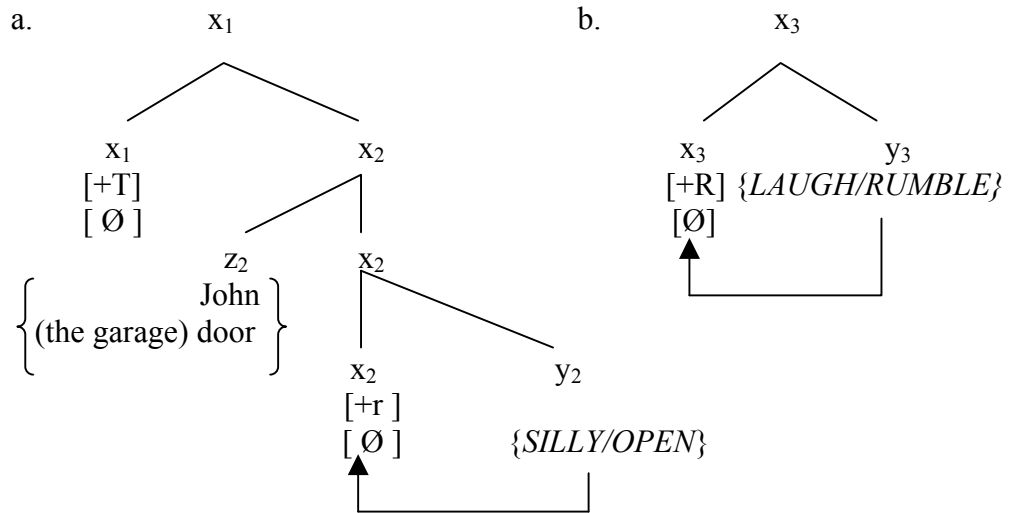
To put it technically, what I claim is that the unergative head in (9b) is inserted via a conflation process into the null unaccusative head in (9a), the resulting complex argument structure being depicted in (10).²⁶³

²⁶² That is, the resulting *syntactic* construction in (7a) is of the unaccusative type: for example, *BE* is selected in (7a) in Dutch or in German. By contrast, if the construction is unergative (*John danced for many hours*), *HAVE* is selected (cf. section 2.2. above). See the relevant contrast in (i) from Dutch (Gretel de Cuyper, p.c.). Cf. also Hoekstra (1984, 1999).

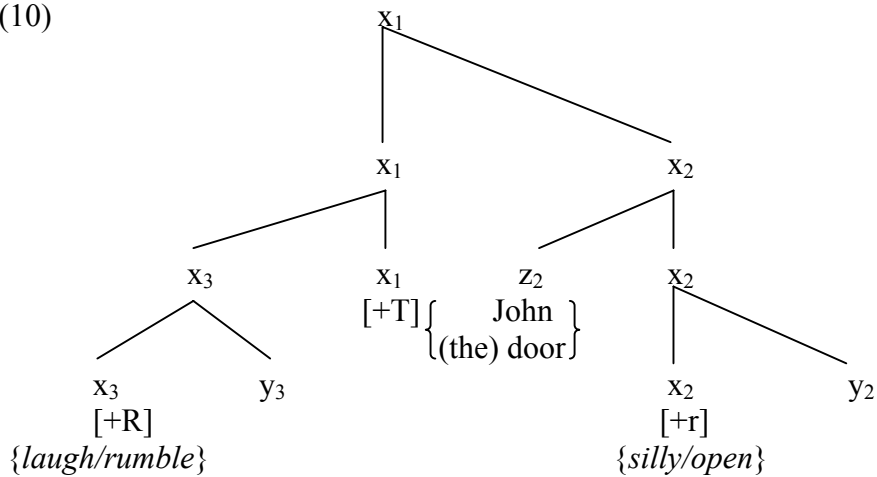
(i) a. Jan *is* de kamer in gedanst (Dutch)
 John *IS* the room in danced
 b. Jan *heeft* gedanst (gedurende vele uren)
 John *HAS* danced (for many hours)

²⁶³ For expository reasons I omit the step of decomposing *into* into a 'terminal coincidence relation' (i.e., *to*) plus a 'central coincidence relation' (i.e., *in*); see section 3.3 above.

(9) #John laughed silly vs. The garage door rumbles open.



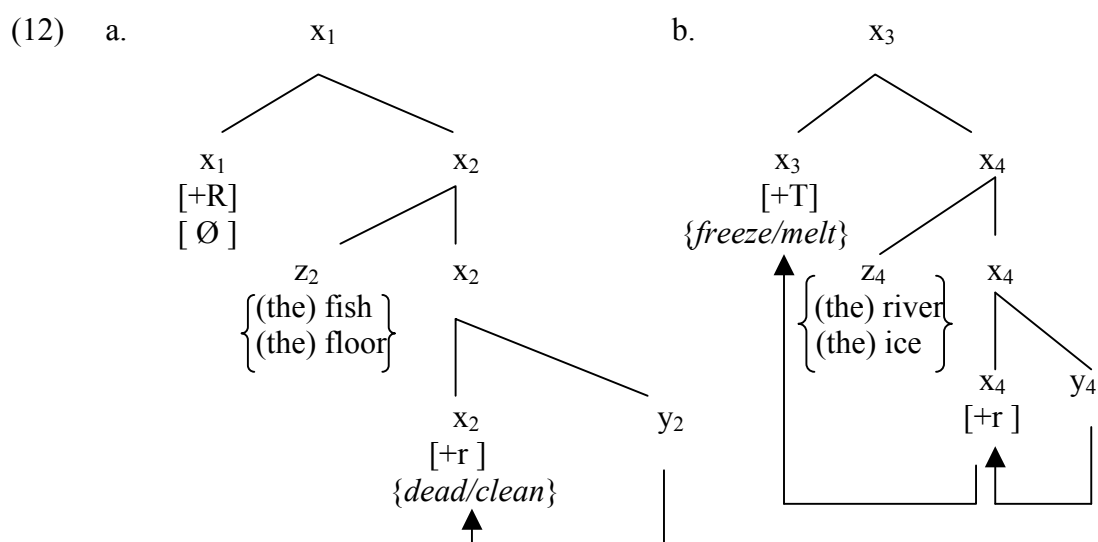
(10)



As argued in section 3.1.3. above, the subordinate argument structure involved in a conflation process like that analyzed in (10) must correspond to one of the unergative type. Accordingly, there must be a syntactic reason excluding examples like those in (3c,d), repeated in (11a,b) below, which contain unaccusative verbs.

- (11) a. *The river froze the fish dead.
 b. *The ice melted the floor clean.
 c. *They arrived the floor dirty.

Notice that there would be no problem with the independently generated derivations in (12a) and (12b), since both are legitimate: the transitive argument structure in (12a) corresponds to a 'caused change of state' (cf. *(The river) killed the fish / (The ice) cleaned the floor*),²⁶⁴ while the unaccusative one in (12b) corresponds to a 'change of state' (cf. *The river froze / The ice melted*). Given this, I want to argue that the complex argument structure involved in the examples in (11) is not well-formed because the inner specifier of (12b) remains unlicensed. As stressed in chapter 3 above, it is the case that the relevant conflation operation always exhausts **all** the lexical material of the subordinate argument structure: that is, no residue can be left behind. Notice that this is accomplished when the conflation operation affects a subordinate unergative argument structure (e.g., cf. (10)): crucially, in (9b) both the unergative eventive head and its non-relational complement are affected by this operation.²⁶⁵



²⁶⁴ Recall that I assume that the external argument is to be introduced by the relevant functional projection (Chomsky (1995)).

²⁶⁵ The subtle contrast between (11) and (i) can be taken as evidence for the present restriction: namely, only unergative verbs ('unergativized' transitive verbs included) can act as subordinate predicates in the relevant conflation operation. Concerning those examples in (i), my proposal is that *roll* and *bounce* are coerced to be used there as unergative verbs (cf. *John {rolled/bounced} the markings off the floor deliberately*). See Levin & Rappaport Hovav (1995) for the proposal that agentive manner of motion verbs are unergative, while non-agentive ones are unaccusative.

(i) a. ?? The wagon rolled the rubber off its wheels.
 b. ?? The ball bounced the markings off the floor.

exs. taken from Rappaport Hovav & Levin (2001: 791)

Note also the compatibility of my explanation of the relevant contrast with the aspectual proposal that two delimiter XPs are involved in (11) but only one in (i): It is the case that an event can be delimited only once (cf. Tenny (1994: 68)).

To be sure, at first sight unaccusative resultatives like those in (13) could be taken as counterexamples to the restriction preventing unaccusative verbs from being the subordinate predicate in the resultative construction. However, following Pustejovsky (1991) and Rapoport (1993, 1999a), here I will assume that those result XPs in (13) (i.e., *crisp*, *solid* or *open*) are added to predicates which lexically entail the achievement of a result state and merely modify this state further. That is to say, those resultative XPs in (13) are considered as adjunct modifiers of the final state encoded into the verb.²⁶⁶ Accordingly, these examples in (13) cannot be considered as counterexamples to the present restriction preventing unaccusative verbs from acting as subordinate predicates: given this, (13a) is to be analyzed as involving a basic unaccusative argument structure (i.e., that corresponding to *The potatoes fried*) plus an *adjunct* modifying the result state.²⁶⁷

- (13) a. The potatoes fried crisp.
 b. The juice froze solid.
 c. The lobster boiled soft. exs. from Rapoport (1999a: 673; ex. (47))

²⁶⁶ Alternatively, examples like (13c) can be argued to involve a conflation process of an unergative eventive head (cf. Germ. *Die Languste hat gekocht*, lit.: 'the lobster HAS boiled') into a null unaccusative one (cf. Germ. *Die Languste ist weich gekocht*, lit.: 'the lobster IS soft boiled'). That is to say, (13c) could be analyzed as (10) above, where the result XP is a true resultative predicate. It remains then to be seen whether this second proposal could be extended to examples such as those in (13a,b). See Labelle (1990, 1992b) for arguments for considering (non-reflexive) "change of state" verbs as unergatives.

On the other hand, Norberto Moreno (p.c.) has reminded me of the non-trivial consequences of Rapoport's proposal as far as the crosslinguistic variation is concerned: if those APs in (13) are adjuncts, why are these examples impossible in Romance? Quite interestingly, notice that my second proposal entertained above would explain it: Romance languages do not present conflation processes of the type analyzed in (10) above. I leave this promising topic open for further research.

²⁶⁷ Notice then that my present analysis is in good tune with that put forward by Rapoport (1999a):

- (i) "The sentences in (47) <(13): JM> are good because the interpretation of the adjunct predicate as a modifier of the FINAL state is possible (...) In (47) <(13): JM> we have examples of the modified result construction". Rapoport (1999a: 673-674)

Given this, I would like to stress the compatibility of Rapoport's (1999a) and Hoekstra's (1992) aspectually-based syntactic accounts with the present relational syntactic and semantic account. According to Hoekstra (1992: 161-162),

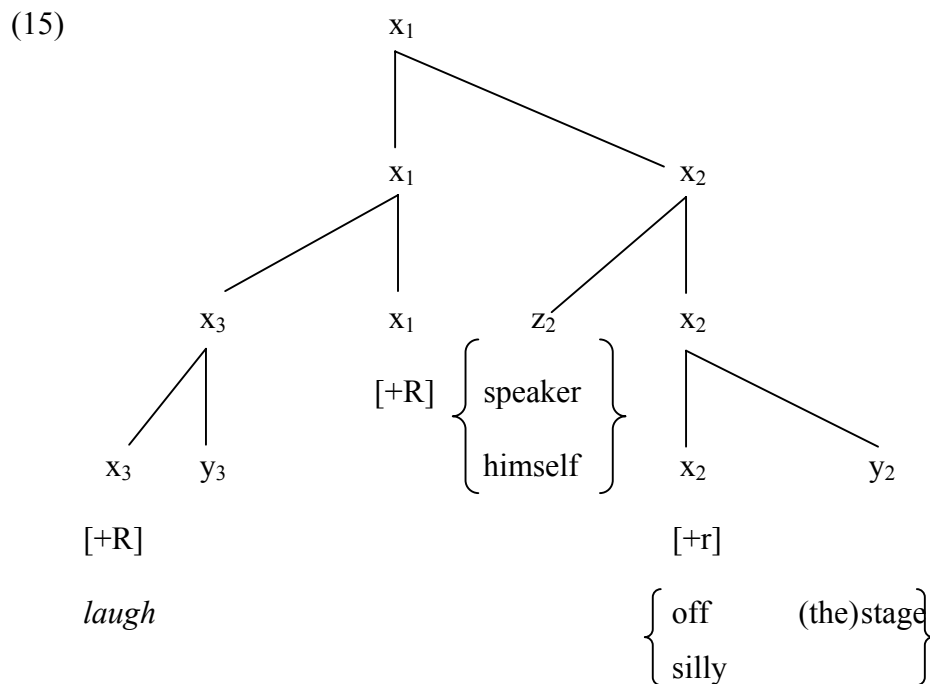
- (ii) "(...) we can isolate the circumstances under which a resultative may be found: the predication must be stage-level <(e.g., cf. **This encyclopedist knows_{individual level} [SC all books superfluous]*> and dynamic <(e.g., cf. **Medusa saw_{dynamic} [SC the hero into stone]*>, but not inherently bounded (e.g., <e.g., cf. **The psychopath killed_{+bounded} [SC the village into a ghost town]*>". Hoekstra (1992: 161-162)

Notice that in tune with Rapoport's (1999a) claim that true resultatives are based on activity verbal heads and Hoekstra's (1992) aspectual analysis in (ii) is the fact that {most of/prototypical} unergative predicates are stage-level, dynamic, and not inherently bounded (but see Harley (1999, 2001) for some exceptional counterexamples).

Next I would like to discuss another confusing point related to the DOR, which has to do with the apparent insertion of a so-called 'fake reflexive object' into an unergative resultative construction (cf. (2a), repeated in (14b) below) in order to preserve the DOR.

- (14) a. They laughed the first speaker off the stage.
 b. John laughed *(himself) silly.

Contra Simpson (1983), I want to argue that the reflexive object in (14b) cannot be regarded as a mere syntactic object (i.e., as a mere syntactic placeholder) inserted in order to maintain the DOR. Quite the opposite: I would like to stress the fact that its semantic function is clear, since the theta role corresponding to the reflexive object must be drawn from the internal specifier position of the complex argument structure in (15). That is, both direct objects *the first speaker* and *himself* have the Figure/Theme role.²⁶⁸



This said, we are ready to deal with the problems posed by some relevant counterexamples to the DOR (e.g., cf. the examples in (4)-(5), repeated in (16)-(17),

²⁶⁸ Recall that I assume that the external argument is to be introduced by the relevant functional projection (Chomsky (1995)).

respectively), where the directional PP is apparently predicated of the subject of the verb.

- (16) a. The wise men followed the star out of Bethlehem.
b. The sailors managed to catch a breeze and ride it clear of the rocks.
c. John danced mazurkas across the room.
d. The children played leapfrog across the park.

Exs. (a,b) from Wechsler (1997); exs. (c,d) from Verspoor (1997), *apud* Rappaport Hovav & Levin (2001: 770)

- (17) a. Morris joked his way into the meeting.
b. Bill elbowed his way through the crowd.
c. Jim moaned her way out of the room.
d. Paco fandangoed his way into the hall.
e. Pat slept her way to the top.
f. Cooper frightened his way into the hearts of defiant adolescents.²⁶⁹

In the following section I provide a relational syntactic and semantic analysis of the *way*-construction. Later on in section 4.3 I will argue that the analysis of this idiomatic construction can shed light on Verspoor's (1997) data in (16c,d). Finally, I will also deal with Wechsler's (1997) counterexamples to the DOR (cf. (16a,b)).

4.2. The *way*-construction: A relational syntactic and semantic account

In this section I provide a relational syntactic and semantic account of the *way*-construction', which is schematically represented in (18) and exemplified in (19).

- (18) [NP_i [V [Poss_i way] PP]]

- (19) a. Morris joked his way *(into the meeting).
b. Bill elbowed his way *(through the crowd).
c. Jim moaned her way *(out of the room).

²⁶⁹ This example is taken from McIntyre (2002: 11; ex. (41a)).

- d. Paco fandangoed his way *(into the hall).
- e. Pat slept her way *(to the top).
- f. Cooper frightened his way *(into the hearts of defiant adolescents).²⁷⁰

Quite interestingly, the analysis of this very productive construction has been argued to yield important conclusions about the syntax-semantics interface.²⁷¹ Part of its intrinsic interest is due to its being a clear example of ‘unselected object construction’:²⁷² notice that it is precisely the directional PP what licenses the presence of the *way* NP as the direct object of the construction. Clearly, the *way* NP is not selected by the intransitive verb in (19). Among other reasons, this fact led Goldberg (1995, 1997) to conclude that the argument structure of (18) is not determined by the verb but by the ‘construction’ itself (see also Jackendoff (1997b) for related discussion).

In the present section, I will concentrate on how the intransitive verb comes to be integrated into the idiomatic construction under study: in particular, the role of the conflation process will be shown to be crucial in the formation. I will analyze which is the relational syntax and semantics assigned to this construction. Special attention will be paid to (i) the causative nature of the construction, and (ii) the crucial distinction between the conceptual semantics *vs.* the relational semantics corresponding to the *way* NP. Conceptually, this NP denotes a ‘Path’, but it will be shown to have been construed semantically as ‘Figure’ or ‘Theme’ in (19).

Before providing my relational syntactic and semantic analysis of the *way*-construction, first I will review some previous approaches.

²⁷⁰ This example is taken from McIntyre (2002: 11; ex. (41a)).

²⁷¹ See Salkoff (1988) for an in-depth descriptive study of the *way* construction and Israel (1996) for an interesting account of how this construction showed up in the history of English. See Levin & Rapoport (1988), Jackendoff (1990, 1992, 1997a), Marantz (1992), Tenny (1994), Goldberg (1995, 1997), McIntyre (2002), and Mateu (2000c), for different theoretical analyses of this construction. In particular, it is interesting to note the radically different conclusions drawn by Jackendoff (1992) and Marantz (1992) as a result of their pursuing different goals (see below for a brief reappraisal of both accounts).

²⁷² See Spencer & Zaretskaya (1998), Mateu (2001a), and McIntyre (2002), among others, for different approaches to so-called ‘unselected object constructions’.

4.2.1. *Some previous approaches*

In order to provide background on the *way*-construction and to introduce some basic points to be dealt with, it will prove useful to review two approaches, upon which my analysis draws quite freely: the ‘constructional approach’ (cf. Jackendoff (1990, ff.) and Goldberg (1995, 1997)), and the ‘aspectual approach’ (cf. Tenny (1987, 1994)), the latter being the basis of Marantz (1992). One of the main problems with these approaches is that they do not address the nature of the conflation of the surface verb into the *way*-construction. For example, Goldberg does not provide any principled explanation to the non-trivial question of what allows the surface main verb in (19) to be ‘integrated’ (to use her terms) into the construction. I will argue that a simple solution can be provided in quite a natural way within the present framework.

Before reviewing Jackendoff’s and Goldberg’s constructional accounts, one caveat is in order here: I would like to emphasize that the present relational syntactic and semantic approach should not be regarded as incompatible with recognizing that there are conceptual restrictions associated to the *way*-construction. In this sense I disagree with Jackendoff’s (1992: 170) claim that a syntactic account of the data in (19) does not seem reasonable in a theory of autonomous syntax. He notes that the alleged syntactic rule should be posited to be sensitive to the conceptual restriction associated with the verb, that is, “to its being an action verb that can be construed as an internally articulated process”. According to him, the alleged syntactic rule or other autonomous syntactic principles should prohibit sentences like those in (20):

- (20) a. *Bill blushed his way out of the room.
b. *Bill had to crouch his way through the low opening.

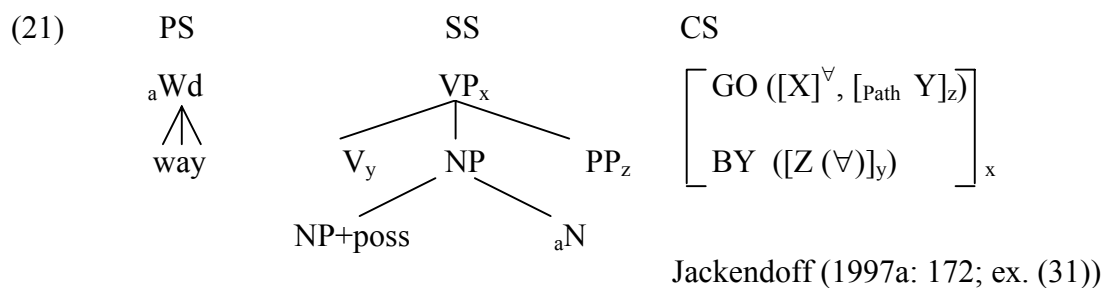
Jackendoff (1992: 171; ex. (31))

This notwithstanding, I will take pains to show that the relevant operation of conflation involved in (19) is crucially sensitive to a morphosyntactic reason (section

4.2.2). The fact that there are non-syntactically transparent conceptual restrictions associated to the *way*-construction does not affect its syntactic computation.²⁷³

Accordingly, I would like to propose that sentences like those in (20) can be freely generated by the computational system, their anomaly being detected in the interpretive semantic component, where the relevant conceptual restrictions analyzed by Jackendoff and Goldberg are to be coded.²⁷⁴

First of all, it will be useful to review Jackendoff's account. In his (1990) book he was the first linguist to consider the *way*-construction as a kind of extralexical construction. More recently, Jackendoff (1997a: 172) claimed that the *way*-construction can be regarded as a 'constructional idiom', listed in the lexicon with the structure depicted in (21):



Jackendoff argues that (21) licenses correspondences of syntactic structure (SS) and conceptual structure (CS) that do not follow canonical principles of argument structure mapping. As a result, the verb is not what licenses the argument structure of the rest of the VP; rather, the construction does. According to Jackendoff (1997: 172), the CS in (21) can be read as saying that 'Subject goes along Path designated by PP, by V-ing' [*sic*].

²⁷³ Were the case that *blush* is an unergative verb in English (see Levin & Rappaport Hovav (1995: 160)), it would be better to replace * ('ungrammatical') by # ('semantically deviant') in (20a). By contrast, (20b) could be analyzed as ungrammatical, provided we show that the verb *crouch* is an unaccusative verb. See below for the syntactic constraint that unergatives (the intransitive use of transitive verbs included) are the verbs that are typically allowed to enter into the *way*-construction.

²⁷⁴ As noted above, I am sympathetic with Marantz's (1997) 'exploding' the concept of lexical entry so as to include an encyclopedic component, where the special meanings are to be coded. These are assumed to have no effect on the syntactic computation. By contrast, there are some UG-based syntactico-semantic (i.e., grammatical) features which are argued to determine the syntactic computation. Moreover, with Marantz, I think that showing that a process has "lexical" restrictions is not to be taken as an inevitable sign that syntax is not involved (see section 3.2.3 above).

Concerning the surface syntax of the *way*-construction, we have seen that the directional PP is obligatory (cf. (19) or (22a)). Moreover, Jackendoff observes that the transitive variant of the verb is unacceptable (cf. (22b)), and that an adverb may not be inserted after the verb in the *way*-construction (cf. (22c)), both points indicating that the *way* NP occupies the position of an ordinary direct object. Quite interestingly, he also points out that an adverb can be inserted between the *way* NP and the PP, indicating a constituent break (i.e., the PP is not to be analyzed as a modifier of the *way* NP; cf. (22d)).

- (22) a. We ate our way *(across the U.S).
 b. *We ate hot dogs our way across the U.S. (cf. ^{ok}We ate hot dogs all the way across the U.S.).
 c. *Bill belched noisily his way out of the restaurant (cf. ^{ok}Bill belched noisily all the way out of the restaurant).
 d. Bill belched his way noisily out of the restaurant (cf. *Bill belched all the way noisily out of the restaurant).

Jackendoff (1992: 162)

This said, let me make some critical remarks on Jackendoff's analysis in (21). First, notice that, as it stands, Jackendoff's claim that the V in the SS must be linked to the subordinate conceptual event introduced by the operator BY, is not but a mere (though correct: cf. 4.2.2 below) stipulation. That is to say, no explanation is provided to why this linking should be established this way. Quite crucially, in section 4.2.2 I will show that such a linking is motivated by the basic morphosyntactic reason that distinguishes 'satellite-framed' languages like English from 'verb-framed' languages like Spanish (Talmy (1985, 1991, 2000)): only the former languages allow the kind of 'non-canonical' linking involved in the *way*-construction, in telic path of motion constructions like *John danced into the room*, or in complex resultative constructions like *Jane talked us into a stupor* (cf. section 3.1.3 above). Second, it appears to be the case that Jackendoff proposes a kind of "unaccusative semantics" for the *way*-construction: *GO* is posited as the main semantic function. However, I will claim that the *way*-construction has a causative-like meaning component, hence its being a transitive construction (cf. section 4.2.2).

Third, our considering the *way*-construction as a causative construction will

allow us to treat the *way* NP as a meaningful element, which Jackendoff wrongly eliminates from his CS analysis in (21).

Next I will review Goldberg's (1995) proposal. Quite interestingly, she noted that the existence of the *way*-construction appears to be motivated by the fusion of two different constructions, e.g., those in (23). For example, the *way*-construction in (19a) *Morris joked his way into the meeting* is said to inherit aspects of both the creation and motion constructions in (23) (cf. also Israel (1996) for a diachronic perspective).

- (23) a. Morris made a path.
b. Morris moved into the meeting.

Following Jackendoff (1990), Goldberg (1995: 202) points out that the verb *joke* in (19a) can take a means sense (cf. the paraphrase in (24a)), or a manner sense (cf. the paraphrase in (24b)).²⁷⁵ To put it in Goldberg's terms, the 'verbal meaning' contributed by *joking* is said to be integrated into the 'constructional meaning' formed by the fusion of (23a) with (23b). As a result, *joke* appears as the main verb of the *way*-construction in (19a).

- (24) a. Morris got into the meeting by joking. (means)
b. Morris went into the meeting while joking. (manner)

Goldberg takes pains to show that the creation and motion senses must be attributed not to the verb but to the construction itself.²⁷⁶ In this sense, she notes that her constructional approach is quite different from the lexical-semantic approach

²⁷⁵ Statistically, the means sense is clearly much more frequent than the manner sense (see Goldberg (1995, 1997) and Israel (1996)).

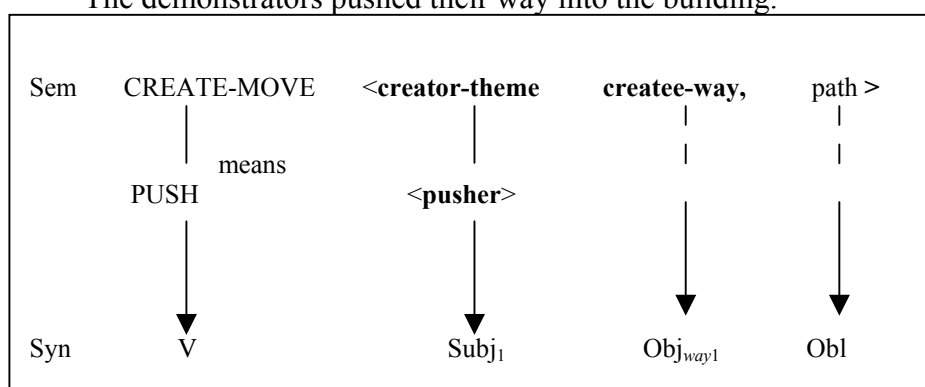
²⁷⁶ Quite interestingly, Goldberg (1995: 199) points out that the example in (i) "entails that Frank moved through the created path out of the prison" (cf. (iii)), this motion sense not being necessarily entailed in (ii) (cf (iv)). Crucially, notice that such an empirical observation is coherent with the fact that the directional PP is a modifier of the direct object in (ii) but it is **not** in (i).

- (i) Frank dug his way out of the prison.
(ii) Frank dug his escape route out of the prison.
(iii) # Frank dug his way out of the prison, but he hasn't gone yet.
(iv) Frank dug his escape route out of the prison, but he hasn't gone yet.

adopted by Levin & Rapoport (1988), where it is suggested that each verb in the construction takes a special motion sense, which is said to be generated via a lexical subordination rule (e.g., *joke 1*; *joke 2*: ‘to move by joking’).

Goldberg’s constructional analysis can be exemplified with her example in (25), which is argued to involve the following ‘composite structure’: *Way*-construction + *push*. In (25), the verb *push* has one obligatory argument, the ‘pusher’, which turns out to be fused with the ‘creator-theme’ argument of the construction. On the other hand, both the ‘createe-way’ and the ‘path phrase’ are also said to be contributed by the construction.

(25) The demonstrators pushed their way into the building.



Goldberg (1995: 208; Figure 9.2)

Unlike Jackendoff, Goldberg provides the *way* NP with its proper place in the semantic representation. This notwithstanding, one important issue remains unsolved. It is not clear how the following relations are to be established: (i) the relation between *CREATE* and *MOVE*, and (ii) the relation between *CREATE-MOVE* and *PUSH*. Notice that this issue is partly related to the first problem I have just attributed to Jackendoff’s analysis (cf. *supra*). As noted, I want to argue that morphosyntax has an important role to play here (cf. section 4.2.2).

Finally, it will be useful to review Tenny’s (1994) aspectual approach. According to her, what appears to be involved in the *way*-construction is an aspectual operation like that depicted in (27b), where $[\emptyset]$ must be read as “empty aspectual grid”.

(26) “The *his/her way* construction adds a [PATH, TERMINUS] aspectual grid to the verb’s lexical entry. It applies to typically unergative verbs—verbs with no aspectual roles”
Tenny (1994: 110)

(27) a. V → V *his/her way* PP_{path}
b. [Ø] → [PATH, TERMINUS]
Tenny (1994: 110)

Indeed, Tenny’s descriptive rule in (27b) can be regarded as giving the correct result, but its explanatory value has not been shown. First, as it stands, it is not clear why the aspectual operation depicted in (27b) applies to English but not to other languages (e.g., Romance). Moreover, once a wider typological perspective is taken into account (like the one provided by Talmy’s (1985, 1991) work on lexicalization patterns: cf. chapter 3 above), it appears to be the case that the “added” element is not the “Path+Terminus” complex, but the activity verb. Second, as noted above, I will argue that the *way* NP is not to be licensed at the syntax-semantics interface as an element expressing a Path, but rather a Figure/Theme. In this sense, the following observation drawn from Marantz (1992: 180) appears to be relevant here. Indeed, the *way* NP can be defined as a Figure/Theme insofar as it “transverses or reaches the location described the PP”:

(28) “The PP that follows the *way* NP serves as a resultative predicate on the *way* NP, giving the reading that the *way* path transverses or reaches the location described by the PP”.
Marantz (1992: 180)

Quite importantly, the basic goal of the following section is to provide a configurational representation to Marantz’s (1992) insight in (28), which is lacking in his descriptively oriented paper.

With this sketchily reviewed theoretical background in mind, next I will put forward my relational syntactic and semantic account of the *way*-construction. Basically, I will concentrate on showing that it is precisely the conflation operation of two different argument structures that accounts for the ‘non-canonical’ linking involved in this idiomatic construction.

4.2.2 *On the relational syntax and semantics of the way-construction*

As noted above, the study of the *way*-construction is theoretically interesting because it can be argued to shed light on some important issues concerning the syntax-semantics interface. The linguists who have studied the *way*-construction differ in their assuming (i) a lexical approach (Levin & Rapoport (1988)) *vs.* a constructional approach (Jackendoff (1997a); Goldberg (1995, 1997)); (ii) a subordination account (Levin & Rapoport (1988); Jackendoff (1990)) *vs.* a non-subordination account (Marantz (1992)); (iii) a syntactically transparent semantic composition (Marantz (1992)) *vs.* an ‘enriched’ composition (Jackendoff (1997a)). Within the present framework, I will put forward some arguments in favor of adopting a relational syntactic and semantic account, which will be shown to incorporate insights from Goldberg’s (1995) constructional approach, Levin & Rapoport’s (1988) subordination account, and Marantz’s (1992) syntactically transparent semantic composition.

To begin with, it should be clear that I do not want to account for constructions like that in (19a) *Morris joked his way into the meeting* by means of generating a special motion sense to be encoded into the particular lexical entry of the verb *joke*, i.e., by means of creating a second verb *joke* as ‘move by joking’ (cf. Levin & Rapoport (1988)). Rather my proposal is more in tune with Borer’s (1994) or Ritter & Rosen’s (1998) proposal that the so-called “extended meaning” is to be created not in the lexicon, but in the computational system. However, I part ways with the latter in two important respects:

First, I do not adhere to their claim that the meaning associated to syntax is licensed through Tenny’s (1994) aspectual principles encoded into the syntax of functional categories: my adopting such a position will be shown to be coherent with the fact that ‘the directionality/resultativity parameter’ involved in (19) has nothing to do with morphosyntactic properties associated to functional categories, as would be expected under Borer’s (1984) or Chomsky’s (1995) assumptions, but with those associated to lexical categories (Snyder (1995a), Mateu & Rigau (1999; 2002)).

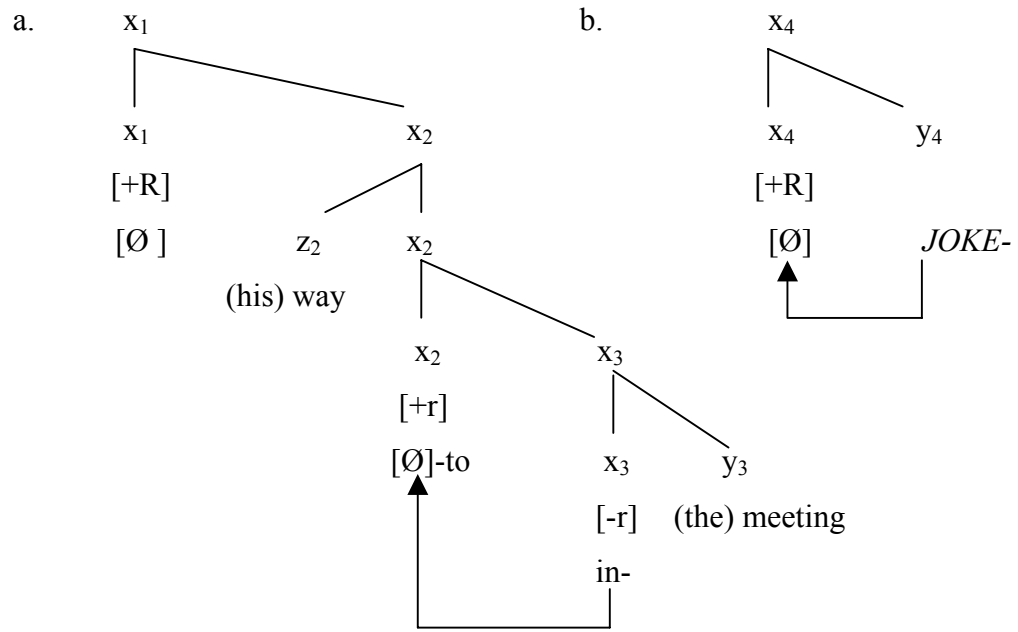
Second, they omit the conflation process involved in the formation of complex resultative constructions (those in (19) included). Actually, such an omission is related to the fact that they do not take a subordination account, as I do (cf. *infra*).

The point of departure of my present account of the *way*-construction is to be found in the following fact analyzed in chapter 3 above: there is a morphosyntactic explanation accounting for the existence of resultative-like constructions such as those in (19) in ‘satellite-framed’ languages like English, and for their absence in ‘verb-framed’ languages like Romance (cf. Talmy (1985, 1991, 2000)). As shown in chapter 3 above, in Romance languages, the relevant Path relation is conflated into the verb, this fact preventing the verb from being conflated with another independent component (e.g., Talmy’s (1985) ‘Manner’ component). By contrast, in satellite-framed languages like English, that relation is allowed to be left stranded as a satellite around the verb, this fact enabling the verb to be conflated with an independent ‘Manner’ component.

In accordance with my present analysis of complex resultative constructions like *Morris talked us into a stupor* or *Morris laughed himself silly*, I will posit that the *way*-construction in (19a) *Morris joked his way into the meeting* can also be argued to be the result of conflating two different, independent argument structures. Notice then that in the present case we are not dealing with an unaccusative structure expressing a change of location which is conflated with an unergative structure expressing an activity (e.g., cf. *Morris danced into the meeting*), but with a transitive structure expressing a caused change of location, the one depicted in (29a), which is to be conflated with an unergative structure corresponding to the activity of *doing joke(s)*: cf. (29b).

Notice that the argument structure in (29a) is nearly identical to that of location verbs like *shelve*, the difference being that the inner birelational element is the head of an overt Small Clause (Stowell (1981); Hoekstra (1988; 1992)). This head encodes a complex spatial relation relating two non-relational elements, *his way* (i.e., the Figure) and *the meeting* (i.e., the Ground). The projection headed by x_2 is argued to be subcategorized for by a phonologically null causative head (x_1), the external argument being introduced by the relevant functional projection (Chomsky (1995)).

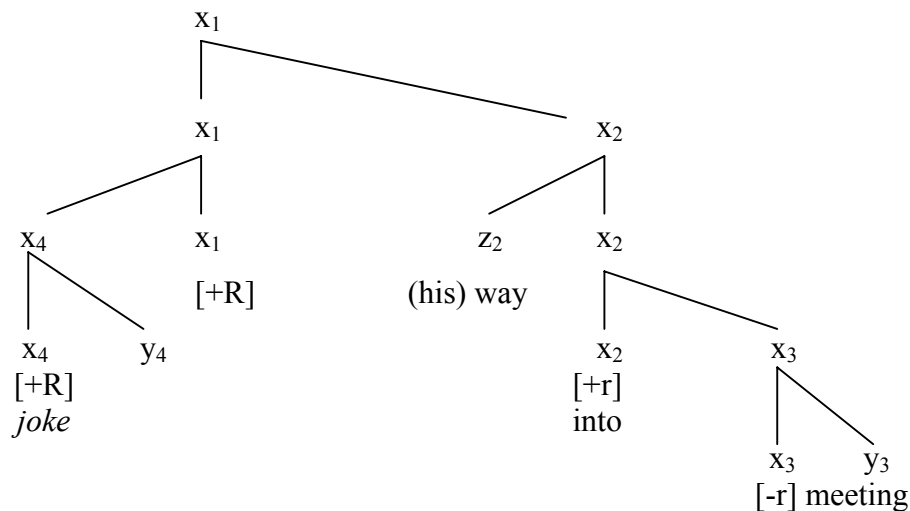
(29)



As above, I assume that the conflation process involving two structures like those in (29a-b) can be argued to be carried out via the syntactic operation of Merge, which has been said to be similar to a ‘generalized transformation’ (Hale & Keyser (1997b)). Crucially, due to the satellite nature of the head *into* (cf. Talmy (1985, 1991)), the phonologically null head of the transitive argument structure in (29a) is allowed to be saturated by another independent argument structure object: e.g., the unergative structure in (29b), which is in turn argued to be formed via the conflation of a non-relational element into an eventive head. As a result of the adjunction process depicted in (30), the phonologically full unergative head provides the empty transitive one with phonological content. Accordingly, notice that my analysis is also compatible with Hale & Keyser’s (1998) proposal that the conflation process appears to be motivated by the following reason: “empty phonological matrices must be eliminated from the morphosyntactic representation of sentences” (p. 80).²⁷⁷

²⁷⁷ The result of the conflation process depicted in (30) gives a complex phrasal idiom: as a complex syntactic object, it is generated by the computational system; as a complex “construction”, it is to be licensed if its idiosyncratic restrictions pointed out by Jackendoff (1992) and Goldberg (1995, 1997) are respected. See Marantz (1997) for some interesting preliminary remarks concerning the relation between the generative computational system and the non-generative encyclopedic component.

(30)



It is then important to realize that the present analysis of the *way*-construction does not violate the DOR, since the result phrase (i.e., *into the meeting*) is not predicated of the external subject (i.e., *Morris*), as Jackendoff argues (cf. (21)), but of the internal 'subject' (i.e., *his way*), namely, the specifier of the spatial projection.²⁷⁸ I will put forward more evidence in favor of this analysis when discussing Marantz's (1992) insights on this idiomatic construction (cf. *infra*).

On the other hand, the *way*-construction has been argued to be a 'diagnostic' for unergative verbs.²⁷⁹ Unergative verbs (intransitivized (i.e., 'unergativized') verbs like the one in (25) included), but not unaccusative ones, are allowed to enter into this transitive construction. Assuming that the former verbs have the ability to assign accusative Case (Burzio (1986)), Levin & Rappaport Hovav (1995: 137) point out that "unaccusative verbs do not appear in this construction, presumably because they lack the ability to assign Case to a postverbal NP". However, such a Case-based explanation cannot be resorted to if we accept the analysis of the complex argument structure in (30): notice that it is the transitive eventive head (i.e., x_1) that is related to accusative Case assignment to the *way* NP. Accordingly, as pointed out by Mateu (2001a), it is not adequate to characterize the *way* NP as an 'unselected object': that is, at the risk of provoking terminological confusion with Goldberg's (1995)

²⁷⁸ Following Jackendoff (1992) and Golberg (1995), we have already discarded the possibility that the directional PP is a modifier of the *way* NP (cf. section 4.2.1 *supra*).

²⁷⁹ See Marantz (1992), Tenny (1994), or Levin & Rappaport Hovav (1995).

constructional account, we could say that it *is* an argument of the main transitive construction in (29a).

The Case-based solution discarded, we must resort to another hypothesis concerning why unergative verbs, but not unaccusatives, are allowed to enter into the *way*-construction. Recall that we have already worked out an explanation of why unaccusative verbs cannot act as subordinate predicates in the formation of complex resultative constructions (cf. section 4.1 above): basically, the inner specifier of the subordinate unaccusative argument structure would remain unlicensed. As stressed in chapter 3 above, it is the case that the conflation operation always exhausts *all* the lexical material of the subordinate argument structure: that is, no residue can be left behind. Notice that this is precisely accomplished when the conflation operation affects a subordinate unergative argument structure: crucially, both the unergative eventive head and its non-relational complement are affected by this operation.

Next I want to make some brief remarks concerning the manner/means distinction involved in the *way*-construction (cf. (24) above). Basically, I think that such a distinction is not relevant at the syntax-semantics interface. However, Goldberg (1995: 209-210) argues for a different position. She notes that the syntactic form of the *way*-construction in (18) is not semantically motivated when the ‘manner sense’ appears to be involved. In this case the construction is argued to lack creation force, and the *way* NP is regarded as non-meaningful. This leads her to propose that the semantic representation corresponding to the manner interpretation lacks both the ‘creator’ and the ‘createe-way’ roles.

Be this as it may, I want to argue that the {means/manner} component lacks primitive status in the present approach. That is, as a result of the conflation process in (30), the subordinate unergative head in (29b) will appear to denote ‘means’ or ‘manner’ depending on the relation of its associated conceptual content with the causative meaning of the null transitive eventive head. This accepted, I do not see any compelling reason to adopt a different (syntactically transparent) semantic structure for the manner sense of the construction.

More importantly, another main point to be dealt with here is the relation between the so-called ‘subordination account’ (Levin & Rapoport (1988); Jackendoff (1990ff.)) and my analysis of the conflation process depicted in (30). I

have just argued that this process involves two different argument structures, the main one being transitive (cf. (29a)), and the *subordinate* one being unergative (cf. (29b)). Although I agree with Levin & Rapoport (1988) and Jackendoff (1990ff.) in their proposing a subordination account to deal with the data in (18), I disagree with their claiming that the *way*-construction involves a reversal of the syntax-semantics relations. According to them, what appears as the main verb in this construction corresponds to a subordinate predicate in the semantic/conceptual representation (e.g., cf. (21)). By contrast, notice that my relational syntactic and semantic analysis in (30) does not imply such a reversal. In fact, this reversal is not but a by-product of a surface illusion, which appears to be due to the fact that it is the subordinate unergative head (x_4) that provides the main transitive one (x_1) with phonological content via the syntactic operation of conflation. This notwithstanding, notice that the abstract causative head x_1 remains as the main predicator in the syntax.

Despite the notable differences between our approaches, it should be clear that I agree with the spirit of Levin & Rapoport's (1988) and Jackendoff's (1990ff.) lexical subordination accounts. However, these accounts have been criticized by Marantz (1992). He points out that the subordination operation proposed for complex resultative constructions (the *way*-construction included) could in fact be applied to almost any change-of-state verb in English:

- (31) “So *x hits y* can be paraphrased as *x makes contact with y by hitting*. When decomposing English verbs of change of state into primitive predicates, there is usually a ‘residual’ meaning that describes the manner or means of bringing about the change of state”.

Marantz (1992: 187)

Putting aside the fact that *hit* is not typically classified as ‘a change-of-state verb’ (e.g., cf. Jackendoff (1990: 107-111)), I think that Marantz is wrong in his trying to equate a complex resultative construction like that in (32a) and a simple transitive construction like that in (32b), as far as the alleged subordination operation is concerned.

- (32) a. John wiped the table dry.
 b. John hit the table.

To be sure, Marantz's paraphrase of *hit* in (31) could be granted descriptive validity as a first approximation, but it relies on a pure intuition, since there is no empirical evidence supporting it. By contrast, it should be clear that there *is* evidence for analyzing complex resultative constructions like that in (32a) as the result of 'fusing' two *independently motivated* semantic components: e.g., by taking a cursory look at Talmy's (1985) study of conflation processes, one realizes that while a vast majority of languages have sentences similar to (32b), it is the case that not all languages have complex resultative constructions involving the *grammatically relevant* conflation of two semantic components like 'Motion' *plus* 'Manner'. As noted above, Romance languages like Catalan typically lack this kind of constructions, the subordination being expressed adverbially:

- (33) a. *En Joan va fregar la taula seca. (*on the resultative reading)
 John wiped the table dry.
- b. En Joan va assecar la taula {amb un drap/?fregant-la}.
 John dried the table {with a clothe/wiping it}

We can then conclude that there is in fact empirical evidence supporting a subordination account of constructions like those in (18). Basically, this comes from Talmy's (1985, 1991) typological work on conflation processes (see chapter 3 above).

Finally, I would like to enter into discussing some important aspects of the semantics of the *way*-construction. Unlike Jackendoff's analysis in (21), I want to argue that the mere syntactic form of this idiomatic construction is quite informative with respect to its associated semantic structure. This proposal should be regarded in accordance with the hypothesis that there is a strong homomorphism between the syntax and semantics of argument structure: following Hoekstra (1992), Baker (1997), or Mateu & Amadas (2001), among others, I am assuming that syntax precisely mirrors coarse semantic configurations.²⁸⁰

²⁸⁰ In particular, it should be noted that this hypothesis is also plausible for those theories that accept Baker's (1988, 1997) Uniformity of Theta Assignment Hypothesis. See also Mateu (1999) for related discussion.

By contrast, Jackendoff (1990, 1997a) has been trying to show that this attractive, ideal situation is false, and hence cannot be sustained. He points out that there are many cases which appear to disconfirm the hypothesis of ‘simple composition’ or ‘syntactically transparent semantic composition’, and hence the analysis of these cases points to the existence of what he calls an ‘enriched composition’. According to Jackendoff (1997a: 173), the *way* construction “offers another source of enriched semantic composition”.

Indeed, it is beyond the scope of this section to discuss Jackendoff’s (1990f.) proposal of non-syntactically based semantic composition.²⁸¹ Here I will limit myself to showing that the *way*-construction can be correctly analyzed from a theory that maintains the simple composition hypothesis.

In particular, here I will review some arguments pointing to the fact that the syntax of the *way*-construction is not to be associated to a ‘motion event’, but rather to a ‘causative event’, as would be expected under a syntactically transparent semantic composition. The following discussion will review some important descriptive observations to be found in Marantz (1992) and Goldberg (1995). Ideally, the present analysis could be regarded as providing us with an appropriate structural representation that accounts for the configurational aspect of their descriptive statements.

An important insight to be found in Marantz (1992) allows us to analyze the *way*-construction correctly. He emphasizes the parallelism of so-called ‘fake resultatives’ like those exemplified in (34) with the *way*-construction.

- (34) a. Nero sang himself hoarse.
b. Pat cried herself asleep.

Such a parallelism appears to be motivated by the following important observation due to Marantz (1992: 185):

- (35) “Nor is the path named by *way* the physical road or location of the journey; it is the person named by the possessor of *way* extended in space (and time)”.

²⁸¹ See chapter 1 above. See Bouchard (1995) or Mateu (1999, 2000a) for some relevant critical remarks on Jackendoff’s proposal.

In order to strengthen his statement in (35), Marantz puts forward empirical evidence based on adjectival modification of the *way* NP, a phrase which was seen to be considered as non-meaningful by Jackendoff (cf. (21)).

- (36) a. He belched his silly way home.
b. *He belched his quick way home.
c. He belched his boring way home.

Marantz (1992: 185; ex. (12))

Crucially, Marantz notes that the adjectives in (36) modify the meaningful *way* NP, this being now understood as the person extended through space and time. For example, Marantz (1992: 185) points out that “*silly* in <36a; his (12a): JM> describes the path of *he*, spread out spatially from some understood starting position to ‘home’ –he was silly while belching on his way home. (36a) does not mean that he went in a silly manner (...) as would be expected if *silly* transferred as an adverbial modification to some GO predicate”.

On the other hand, Goldberg (1995: 216) makes an interesting reinterpretation of Marantz’s proposal. She notes that the *way* NP can be interpreted as an inalienably possessed path:

- (37) “The path exists only where the mover travels because it is created by the traveler. The path is therefore inalienable”.

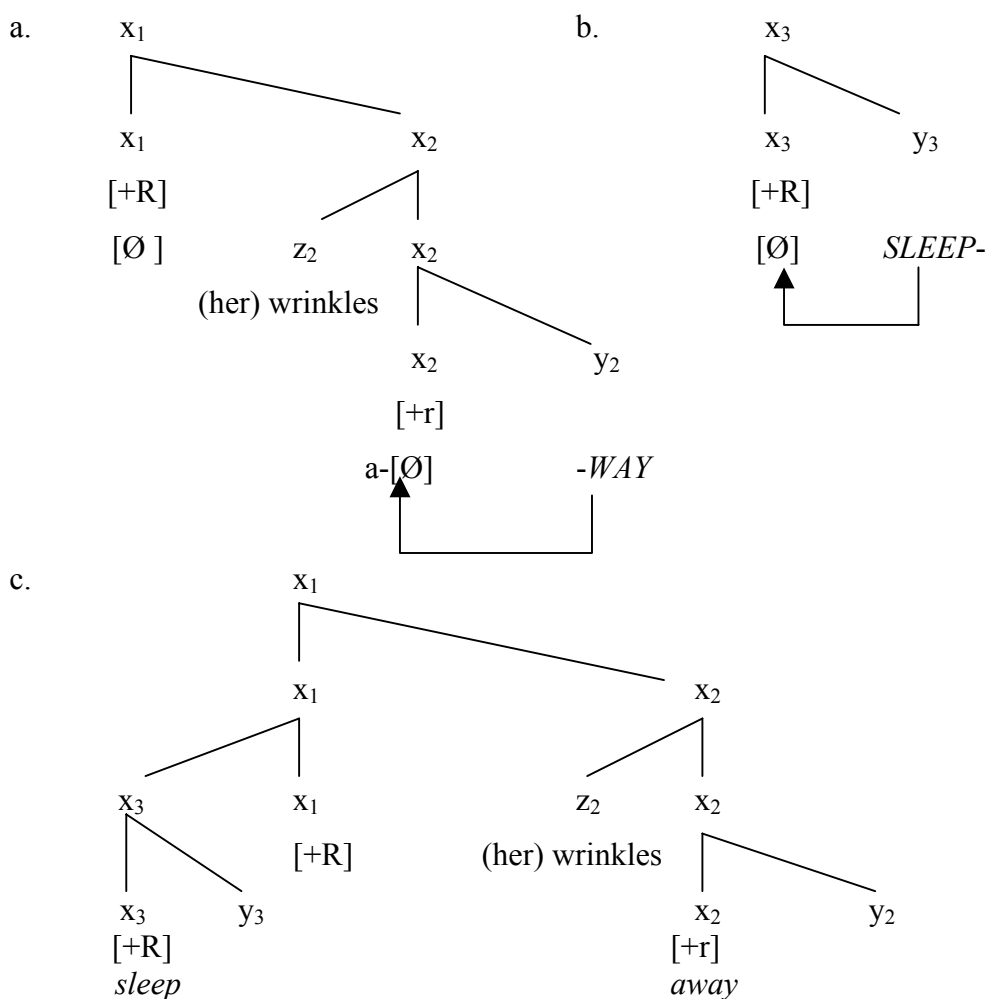
Goldberg (1995: 216)

It seems then plausible to relate the examples of the *way*-construction to ‘fake object’ cases that denote inalienably possessed terms, specifically body part terms:

- (38) a. Pat slept her wrinkles away.
b. Nero cried his eyes out.

This accepted, it is reasonable to postulate that the same argument structure analysis depicted in (30) applies to resultative constructions like those in (38) as well: cf. (39).

(39)



Accordingly, notice that the configurational counterpart of Marantz's and Goldberg's descriptive insights reviewed above can be structurally represented by means of a 'small clause'-like projection headed by a terminal coincidence relation, its corresponding spatial projection being in turn subcategorized for by the causative head x_1 . Unlike Jackendoff, I claim that the unquestionable *causative* semantics of (38a) (cf. 'Pat caused her wrinkles to go away by sleeping') holds for the *way* construction as well.²⁸²

²⁸² As noted above, the external argument (i.e., the causer) is assumed to be introduced by the relevant functional projection (Chomsky (1995)). In both the *way*-construction and the resultative constructions in (38), the external argument is to be coindexed with the possessor associated to a non-relational element occupying the specifier of the spatial projection; this binding relation of inalienable possession could be argued to be licensed at LF in virtue of the relevant legibility conditions. I will not pursue a formal explanation of this topic here. Be this as it may, the relevant point is that the oddity of examples like those in (i) is to be attributed to identical reasons.

- (i) a. * He joked her way into the meeting.
b. *Sleep my wrinkles away/*He cried her eyes out.

Furthermore, concerning my proposal that the specifier of the spatial projection is to be interpreted as Figure and its complement as Ground, it is interesting to note that Marantz's (1992: 185) observation that the *way* NP is nothing but "the person extended though space", is coherent with representing this phrase as the Figure of the transitive argument structure in (29a), i.e., as the internal subject of the result phrase which contains the location (i.e., the Ground) reached by the "mover". My proposal is then that both the mover represented by the *way* NP and the inalienably possessed objects in (38) are to be interpreted semantically as Figure. Indeed, as noted in section 4.2.1, the *way* NP can be said to refer to a Path in the non-linguistic conceptual scene, but what is actually relevant in our analysis of so-called 'syntactically relevant aspects of meaning',²⁸³ is that it is construed as Figure/Theme at the syntax-semantics interface. In other words, the conceptual scene involved in the *way*-construction can be said to describe a motion situation, but what is grammatically (i.e., syntactically) relevant is that such a situation has been construed as a causative event.

To put it differently, let me explain where the alleged motion sense in the *way*-construction comes from. Recall that constructionalists like Jackendoff or Goldberg attribute it to the extralexical construction. However, I think that Jackendoff's intuition that the subject of the *way*-construction is the Theme of the motion event can be said to be drawn from Marantz's insight that the *way* NP is to be associated with the mover. My proposal is that the motion event is not represented in the complex argument structure in (30) (cf. there is no eventive head with the *T*(ransition) feature), but it comes from the interpretive effect of associating the causative eventive head of x_1 (cf. its *+R* feature) with the terminal coincidence relation of x_2 (cf. its *+r* feature). That is, the causative head x_1 *plus* the telic directional head x_2 imply that there is a (caused, inherently directed) motion involved in the *way*-construction. In short, the motion event is entailed but not represented in the syntactically transparent argument structure.

To conclude, the semantic composition involved in the *way*-construction can be naturally viewed as syntactically transparent (Marantz (1992)). This accepted, notice that the DOR is *not* violated in the *way*-construction either, *quod erat demonstrandum*.

²⁸³ See Pinker (1989) or Levin & Rappaport Hovav (1995), among others. See also Rosen (1996) for an interesting critical review of their lexical-semantic approach.

4.3. Regaining the DOR: Some counterexamples revisited

In this section I argue that the analysis of the *way*-construction presented in the previous section can shed light on Verspoor's (1997) examples in (16c,d), repeated in (40c,d) below, which have been said to be problematic for syntactic approaches based on the DOR. Later on I will also show why Wechsler's (1997) apparent counterexamples in (40a,b) must be reassessed in the light of crucial evidence from Dutch and German.

- (40) a. The wise men followed the star out of Bethlehem.
b. The sailors managed to catch a breeze and ride it clear of the rocks.
c. John danced mazurkas across the room.
d. The children played leapfrog across the park.

Exs. (a,b) from Wechsler (1997); exs. (c,d) from Verspoor (1997), *apud* Rappaport Hovav & Levin (2001: 770)

In order to provide relevant background on what is to be discussed in the present section, it will be useful (and in fact necessary) to take a look at what two referees of Rappaport Hovav & Levin's (2001) paper suggest concerning the exceptional examples in (40):

- (41) "Two referees suggest these examples <those in (40): JM> only appear to have subject-predicated result XPs and are more appropriately analyzed as having the result XP predicated of the object, consistent with the DOR. They propose that the result XP is felt to be predicated of the subject due to a semantic relation between the subject and the object (...) On the suggested analysis <of (40a,b): JM> , the result XP really specifies the position of the object, and the location of the subject is indirectly determined since its motion is constrained by the location of the object (...) <In (40c,d): JM> the suggestion is that the performance itself traverses a path as it is created, and since the subject is engaged in this performance, the subject's own path can be determined from that of the performance".

Rappaport Hovav & Levin (2001:771)

Concerning the examples in (40c-d), I think that the informal comments of Rappaport Hovav & Levin's referees summarized in (41) are not misguided, and are in fact crucial to properly interpret those apparently problematic data. According to these referees, in (40c-d) the performance itself (that is, *mazurkas* in (40c) and *leapfrog* in (40d)) traverses a path (that is, that defined by the directional PP) as it is created, and since the subject is engaged in this performance, the subject's own path can be determined from that of the performance. As a result, it is important to notice that what these two referees claim is that the apparent predication relation between the subject and the telic directional PP is semantically inferred, but not syntactically represented.

Quite importantly, here I want to suggest that the referees' informal comments concerning the data in (40c-d) also hold for the examples of the *way*-construction in (19), repeated in (42) below.

- (42) a. Morris joked his way into the meeting.
b. Bill elbowed his way through the crowd.
c. Jim moaned her way out of the room.
d. Morris fandangoed his way into the hall.
e. Pat slept her way to the top.
f. Cooper frightened his way into the hearts of defiant adolescents.²⁸⁴

Recall that the sentences in (42) could be said to have subject-predicated directional PPs (as Jackendoffs argues (see his analysis in (21) above), but I have just argued that they are more appropriately analyzed as having this directional PP predicated of the *way* NP. The PP in (42) is felt to be predicated of the subject due to a (syntactically transparent) semantic relation between the subject and the direct object.

In particular, following Goldberg's (1995:216) suggestion that the *way* NP means a *created* path, I want to argue for the validity of the following parallelism between (43a) and (43b):

²⁸⁴ This example is taken from McIntyre (2002: 11; ex. (41a)).

- (43) a. Two referees of Rappaport Hovav & Levin (2001: 771): "<In (40c-d): JM> the suggestion is that *the performance itself traverses a path as it is created, and since the subject is engaged in this performance, the subject's own path can be determined from that of the performance* (emphasis added: JM)". Cf. the last three lines in (41) above.
- b. *Mutatis mutandis*, my present suggestion is that "the *way* NP itself traverses a path as it is created, and since the subject is engaged in the creation of the *way* NP, the subject's own path can be determined from that of the *way* NP".

Quite importantly, I argue that both the NP expressing the performance in (40c,d) (i.e., *mazurkas* and *leapfrog*) and the *way* NP in (42) are to be licensed as having the Figure/Theme role at the syntax-semantics interface. In this sense, recall Marantz's (1992: 28) insight in (28), repeated in (44a) below. *Mutatis mutandis*, the same insight can be argued to hold for the data in (40c-d): cf. (44b).

- (44) a. "The PP that follows the *way* NP serves as a resultative predicate on the *way* NP, giving the reading that the *way* path transverses or reaches the location described by the PP" (Marantz (1992: 28))
- b. "The PP that follows the performance (i.e., *mazurkas* or *leapfrog*) serves as a resultative predicate on this created object, giving the reading that the path encoded by *mazurkas* or *leapfrog* transverses the location described by the PP".

Given this mere description of facts, let me then advance the analysis to be presented below. Elsewhere I have argued that Hoekstra's (1988, 1992) SC analysis of resultative constructions can provide us with a good starting point.²⁸⁵ As noted above, the SC analysis of resultative constructions can be argued to respect the DOR provided that the descriptive label of "direct object" can include the inner subject of a SC. Notice that such a move is actually necessary in order to account for examples

²⁸⁵ See Mulder (1992), den Dikken (1992/1995) or Mateu (2001c) for some extensions of Hoekstra's (1984, 1988, 1992) pioneering work on the syntax of predication.

such as those in (45), which are typically described as 'unselected object constructions' (cf. Mateu (2001a), among others).

- (45) a. He laughed [_{SC} himself sick]
 b. She laughed [_{SC} him out of his patience]
 c. We talked [_{SC} her out of her crazy schemes]
 d. They danced [_{SC} their days away]
 e. The joggers ran [_{SC} the pavement thin]
 f. The clock ticked [_{SC} the baby awake]
 g. I shall walk [_{SC} you to the station]
 h. He washed [_{SC} the soap out of his eyes]
 i. He shaved [_{SC} his hair off]
 j. They wrung [_{SC} a confession out of him]
 k. He rubbed [_{SC} the tiredness out of his eyes]
 l. They ate [_{SC} us out of house and home]
 m. The sopranos sang [_{SC} us sleepy]

exs. from Hoekstra (1992: 150-151; ex. (21,23))

Applying then Hoekstra's SC analysis to the present resultative-like constructions under study, we get the following simplified structures in (46), which also respect the DOR:²⁸⁶

²⁸⁶ This notwithstanding, as noted by Mateu (2001c), Hoekstra's (1988, 1992) theory of SCR<esult>s, as it stands, cannot be granted explanatory status yet. In particular, notice that what Hoekstra does not explain is the crosslinguistic variation involved: no explanation is provided concerning the "directionality/resultativity parameter" (Snyder (1995a); Mateu & Rigau (1999, 2002), among others). For example, what prevents Romance speakers from forming SCRs like those in (45) or (46)? As pointed out by Mateu (2001c), this question can be said to be "innocuous" for constructionalists like Jackendoff but should not be so for proponents of Hoekstra's SC approach.

According to Jackendoff, it is simply the case that Romance languages lack the relevant "correspondence rule", in particular his *Verb Subordination Archi-construction* depicted in (i), which is also said to account for resultative-like constructions. Thus, for example, both "the *way* construction" (see (21) above) and "the *time-away* construction" in (ii) can be regarded as particular instantiations of the "Archi-construction" in (i).

(i) 'Verb Subordination Archi-construction'

a. [_{VP} V....]
 b. 'act (by) V-ing'

(ii) Time-*away* construction

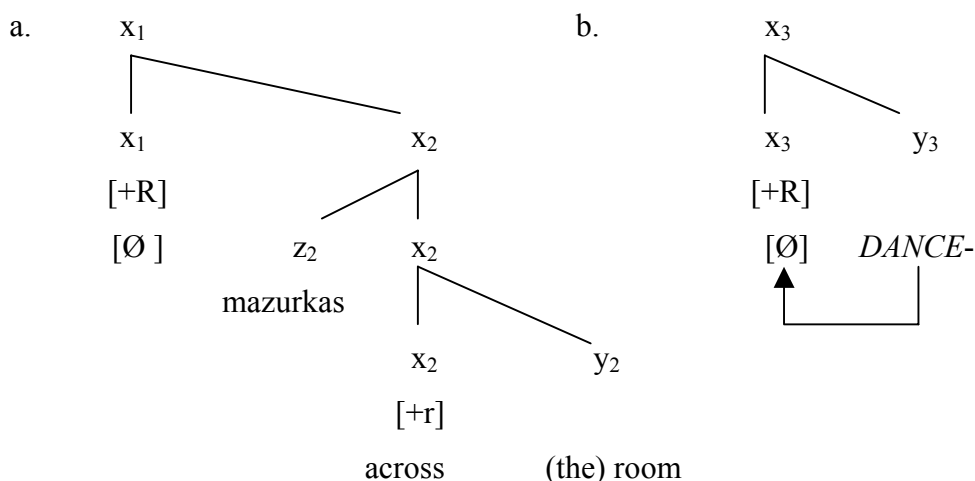
a. [_{VP} V NP away]
 b. 'waste [_{Time} NP] by V-ing' Jackendoff (1997b: 554-555; exs. (101-102))

See Mateu (2001c) where it is argued that Hoekstra's approach can be shown to be more explanatory than Jackendoff's or Goldberg's accounts if it is complemented by Mateu & Rigau's (1999, 2002) minimalist account of those 'conflation processes' described by Talmy (1985, 1991). See also chapter 3 above for relevant discussion related to the present framework.

- (46) a. John danced [_{SC} mazurkas across the room] (cf. (40c))
 b. Morris joked [_{SC} his way into the meeting] (cf. (42a))

Next I show the theoretical advantages of formalizing the informal comments on the data in (40c,d) above into the present framework. Following my analysis of the *way*-construction presented in section 4.2.2 above (cf. (29)-(30)), I claim that the argument structure analysis of transitive resultative(-like) constructions like those in (40c,d) involves the syntactic composition of two different argument structures, the main one being transitive (cf. (47a)), and the subordinate one being unergative (cf. (47b)). I exemplify the conflation process by analyzing the example in (40c) *John danced mazurkas across the room*.²⁸⁷

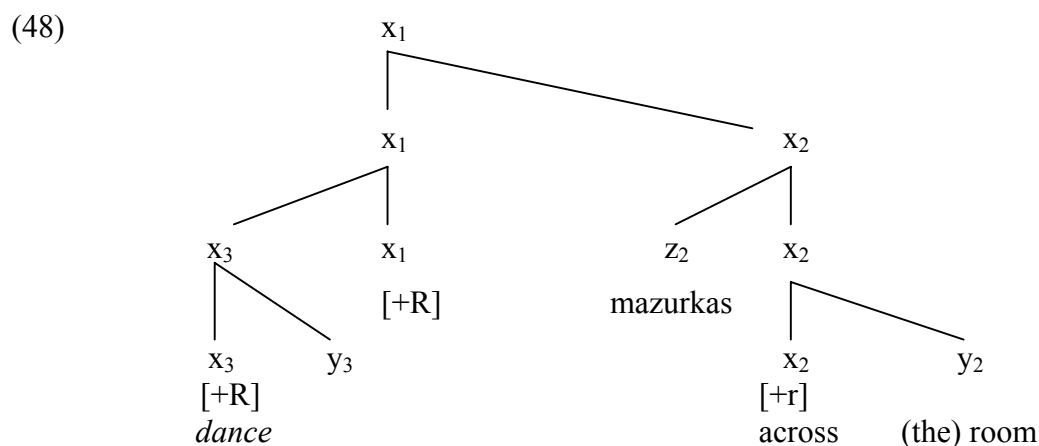
(47)



As argued above, the formation of complex resultative constructions involves the conflation of two different argument structures via a generalized transformation, the result being represented as an adjunction process (see (48)): that is to say, the subordinate unergative head depicted in (47b), which is typically associated to an activity, is conflated into the null eventive head of the main transitive argument structure depicted in (47a), the resulting complex argument structure being associated to an accomplishment. As argued in chapter 3 above, it is precisely the ‘satellite’ (i.e., non-conflating) nature of the birelational element in (47a) (i.e., x_2)

²⁸⁷ Hoekstra’s (1988, 1992) SCR constituent is to be translated into a spatial projection, headed by a birelational ‘terminal coincidence relation’ (x_2): it relates a ‘Figure’ (e.g., *mazurkas*) to a ‘Ground’ (e.g., *the room*).

that allows the unergative head in (47b) to be merged into the null eventive head in (47a).²⁸⁸



Let us then see whether there are empirical facts that could be argued to support the previous analysis. In particular, here I would like to discuss one tricky point concerning the validity of the DOR when applied to Verspoor's (1997) examples in (40c,d). Basically, the problem comes from the fact that those problematic examples cannot be passivized. A relevant contrast commented on by Rappaport Hovav & Levin (2001) is that corresponding to the minimal pair in (49):²⁸⁹

- (49) a. *Leapfrog can be played across this park.
 b. ^{ok}Leapfrog can be played in this park.

Rappaport Hovav & Levin (2001: 771; fn. 9)

This observation has been considered by Rappaport Hovav & Levin (2001) as evidence for the fact that the result XPs in (40c,d) are subject-oriented. As an alternative to those comments made by their referees (see (41) above), which suggested that those problematic examples in (40c,d) can be argued to respect the DOR, Rappaport Hovav & Levin (2001: 771) point out:²⁹⁰

²⁸⁸ Note also that once again I assume that the external argument is to be introduced by the relevant functional projection (Chomsky (1995)).

²⁸⁹ By the way, note their correct strategy of using a modal context in order to avoid the well-known discourse constraints on passivization.

²⁹⁰ Following Levin & Rappaport Hovav (1995: 49), Roberts (1988: 705), and Rothstein (2000),

(50) “(...) we introduce a diagnostic that can pinpoint whether a result XP is predicated of the subject or the object and use it to show that the result XP is clearly predicated of the subject at least in at least some examples (...) verbs with subject-predicated complements cannot be passivized, a generalization which Bresnan (1982: 402) attributes to Visser (1963-1973, part III.2: 2118). Visser’s Generalization, as Bresnan calls it, accounts for the ungrammaticality of **Sam was promised to leave the country*, where the controller of the missing subject of the embedded clause is the logical subject of the matrix verb.”

Rappaport Hovav & Levin (2001: 771)

However, I interpret the interesting contrast in (49) differently. More perspicuously, I want to suggest that the NP that names the performance (i.e., *leapfrog*) is to be analyzed as a simple created object in (51b), the presence of the locative PP *in the park* being irrelevant to the interpretation of the NP object. However, in (51a) *leapfrog* is rather to be analyzed in the same way as those two referees of Rappaport Hovav & Levin suggest in (43a) above, their relevant quote

Rappaport Hovav & Levin (2001: 771) point out that "result XPs pattern like complements with respect to a variety of syntactic processes". Following Rappaport Hovav & Levin (2001), I will assume that in the examples in (40c,d) the PPs act as complements, and not as adjuncts (but see McIntyre (2002)). Of course, I am aware of the importance of such an assumption: were one to prove it wrong, the referee's relevant comments in (41) and my corresponding formal implementation would turn out to be vain, since the SCR analysis of the *way*-construction would not be applicable to (40c) nor to (40d) any longer. Be this as it may, it is not clear to me how the adjunction analysis of the PPs in (40c,d) could explain the relevant contrast in (49), among other facts.

This notwithstanding, Heidi Harley (p.c.) let me know that that those facts in (49) commented on by Rappaport Hovav & Levin are not so clear-cut. Concerning my present analysis of these facts, Harley pointed out to me that "this is one possible way to go, which looks pretty good. The other possibility is to argue that Levin & Rappaport Hovav are just wrong about the facts". Looking on the Internet for "naturally produced examples", she found relevant passives like the following ones:

- (i) Lacrosse game was played with over 6000 players per team, and was played across miles.
- (ii) Field four was played across a wide open slope (dotted with inflatable Speedball targets) and the surrounding woodland.
- (iii) There are also cases when Tag was played across a particularly large space.
- (iv) The game you see in these photos was played all the way up the mountain.

The examples in (i) and (iv) do not seem to me relevant counterexamples to Rappaport Hovav & Levin's point: quite probably, we would all agree that the PP *across miles* in (i) is to be analyzed as an adjunct. The same should hold for the directional PP in (iv) (cf. Jackendoff's analysis of the relevant contrasts in (22) above): quite clearly, the modifier *all the way* introduces a directional adjunct in both (22) and (iv).

Pending a final analysis of the data in (ii)-(iii), for the time being I will assume that Rappaport Hovav & Levin are right about the facts in (49). It is my intention to show that even if they are right about the facts, there is another way of dealing with them that does *not* violate the DOR. It should then be clear that (i) the DOR is trivially regained if Harley and McIntyre are right (i.e., the PPs in (40c,d) are adjuncts) and (ii) it is not so trivially regained if Rappaport Hovav & Levin's referees and I are right (i.e., the PPs in (40c,d) are object-predicated complements).

being repeated in (52). Accordingly, I argue that *leapfrog* can be analyzed as Figure in (51a), but not in (51b). Hence the parallelism with the *way*-construction analyzed above (cf. (43b)).

- (51) a. (The children) [played [leapfrog across the park]]
 b. (The children) [played leapfrog] [_{adjunct PP} in the park]

(52) Two referees of Rappaport Hovav & Levin (2001: 771): "<In (40c-d): JM> the suggestion is that *the performance itself traverses a path as it is created*, and since the subject is engaged in this performance, the subject's own path can be determined from that of the performance (emphasis added: JM)".

This descriptive point accepted, let us now try to explain the ungrammaticality of (49a) **Leapfrog can be played across the park*. I want to argue that the relevant reason is not to be related to Visser's Generalization mentioned in (50), but rather to Massam's (1990: 180) generalization in (53), which was basically posited in order to account for the ungrammaticality of examples like those in (54).

(53) "Passivization of C<ognate>O<bjects> is not possible as seen in (6a) <cf. (54a): JM). This need not be taken as evidence that the CO is not an object, however, since there are other types of direct objects which also do not passivize. Of particular interest to us is the fact that other direct objects which involve a necessarily bound element cannot undergo passive <cf. (54): JM>. This is true whether the bound element is overt or unexpressed (...) The following generalization can be made: *If the direct object contains a bound variable, passive is impossible (whether or not this element is syntactically explicit)*. <emphasis added: JM>".

Massam (1990: 180)

- (54) a. *A silly smile was smiled (by Ethel)
 b. *His way was moaned out the door by Alfred.
 c. *A way was moaned out the door by Alfred.
 d. *Her thanks were smiled by Rilla.
 e. *Grateful thanks were smiled by Rilla.

- f. *His toe was stubbed by Philip.
- g. *A toe was stubbed by Philip.
- h. *His neck was craned by Ted.

exs. from Massam (1990: 164, ex. (6a); 180, ex. (60))

Quite interestingly, notice the happy coincidence between Massam's work and mine. Massam's generalization in (53) can be argued to give us the clue: it provides us with a *uniform* explanation of the impossibility of passivizing so-called 'cognate object constructions' (cf. (54a)), the *way*-construction (cf. (54b)) *and* those examples in (40c-d). If I am on the right track concerning the non-trivial parallelism between the *way*-construction examples and the ones in (40c,d), the explanation of why the example in (49a) and that in (54b) are ungrammatical should be the same one in essence: notice that Goldberg's (1995: 216) insight in (37), repeated in (55), can be argued to hold not only for the *way*-construction examples but for these examples in (40c,d) as well. It is the case that in both cases the SCR can be argued to encode an *inalienable path*, hence the impossibility of their passive counterparts.

- (55) The path exists only where the mover travels because it is created by the traveler. The path is therefore inalienable". Goldberg (1995: 216)

So far my account of Verspoor's (1997) examples in (40c,d). In the remainder of this section I will be dealing with Wechsler's (1997) *follow*-type sentences, which have also been said to be problematic for the DOR. Some relevant examples are given in (56).

- (56) a. The police followed the thief to his house.
 b. The wise men followed the star out of Bethlehem. (cf. (40a))

Here I want argue that the *follow*-type sentences fall into two basic syntactic types: the unaccusative type and the truly transitive one. Quite interestingly, notice that there is evidence from Dutch showing the unaccusativity of sentences like those in (56): for example, see the unaccusative diagnostics in (57) (cf. the auxiliary selection in (57a) and the use of participle in prenominal position in (57b).

- (57) a. De politie *is* de dief tot zijn huis gevolgd (Dutch)
 the police IS the thief to his house followed
 b. deze mij tot aan de deur gevolgde politieman
 this me until the door followed policeman
 ex. (57a) from Lieber & Baayen (1997: 791)
 ex. (57b) from Hoekstra (1998: 76)

Following den Dikken (p.c.), I will assume that three syntactic configurations can in principle be assigned to an example like that in (56a). On the empirical basis of the data in (57), we can posit an unaccusative configuration like that in (58a): the incorporation of an abstract ‘central coincidence relation’ (*AFTER*) into the unaccusative verb (*GO*) would be spelled out as *volgen/follow*. On the other hand, when *hebben* (HAVE) is selected (i.e., when the “true” transitive use is involved), two analyses are possible (details being omitted in (58)): in (58b) the directional PP is an adjunct (e.g., it can be omitted and extraposed in *dat*-clauses), and in (58c) the PP is the SC predicate.

- (58) a. de politie_i GO [_{SC/PP} t_i AFTER de dief] [_{adjunctPP} tot zijn huis]
 b. de politie volgen de dief [_{adjunctPP} tot zijn huis]
 c. de politie volgen [_{SC/PP} de dief tot zijn huis]
 den Dikken (p.c.)

According to den Dikken (p.c.), "with these three structures in place, we can cover the entire spectrum of "follow" facts. The interesting English example *The wise men followed the star out of Bethlehem* would be cast into the mould of <(58a): JM>. Given this, *zijn* (i.e., BE) appears to be the more natural auxiliary in the Dutch counterpart of this sentence. He pointed out that "the result with *hebben* <HAVE: JM> isn't exactly impossible, but sounds awkward; there seems to be a sense that one wouldn't "have follow" a distant inanimate object like a star (...) *my suspicion is that "have+follow" is much like "pursued"* (emphasis added: JM); just like one wouldn't pursue a star, one wouldn't "have+follow" a star either; on the other hand, one can of course be in hot pursuit of a criminal <e.g., cf. (58b-c): JM>"

Two relevant points can be drawn from den Dikken's insightful comments. On the one hand, notice that the impossibility of passivizing Wechsler's example in

(56b) is not to be related to the fact that it involves a subject-predicated result XP (i.e., to Visser's Generalization, as argued by Rappaport Hovav & Levin (2001: 771)), but rather to the fact that it is an unaccusative construction.

Moreover, notice that the contrast between (59a) and (59b) is also expected under my present analysis. (59a) is ungrammatical since the most natural interpretation to be assigned to (56b) is that corresponding to an unaccusative construction structurally identical to the one in (58a); Rappaport Hovav & Levin refer to this interpretation as "correlated motion". In contrast, the well-formedness of (59b) is to be related to the fact that (56a) has the additional reading that corresponds to a transitive structure.²⁹¹ All in all, the relevant generalization appears to be the one stated in (60).

- (59) a. *The star was followed out of Bethlehem.
 b. The thief was followed to his house.
- (60) a. Correlated motion sense ↔ Unaccusative structure ('BE' selected)
 b. Detective-suspect/causative sense ↔ Transitive structure ('HAVE' selected)

On the other hand, those informal comments in (41) concerning the *follow*-type sentences (the relevant comments are repeated and emphasized in (61) below) could then only be argued to hold on the basis of the (simplified) SC analysis in (58c).

- (61) "Two referees suggest these examples <those in (40): JM> only appear to have subject-predicated result XPs and are more appropriately analyzed as having the result XP predicated of the object, consistent with the DOR. They propose that the result XP is felt to be predicated of the subject due to a semantic relation between the subject and the object (...) *On the suggested analysis <of (40a,b): JM> , the result XP really specifies the position of the*

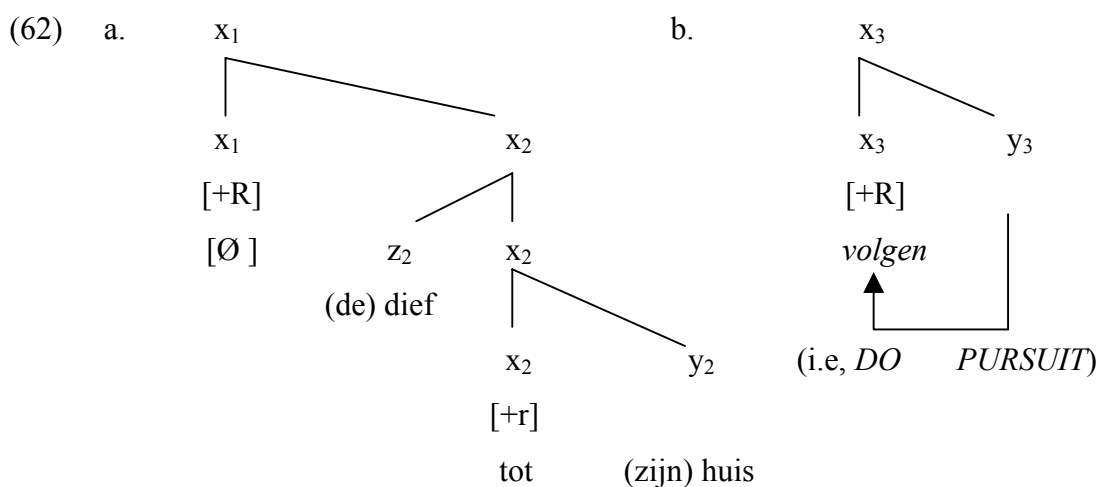
²⁹¹ As pointed out by Rappaport Hovav & Levin, *follow*-type sentences can be passivized only in their causative sense (ergo in their transitive use):

(i) "(...) passive sentences with *follow* are acceptable only on the detective-suspect sense. *Kim was followed into the lab* is felicitous, but it clearly receives the detective-suspect -and not the correlated motion <cf. (41): JM>- interpretation, though its active counterpart is open to both interpretations."
 Rappaport Hovav & Levin (2001: 772)

object, and the location of the subject is indirectly determined since its motion is constrained by the location of the object <emphasis added: JM> (...). <In (40c,d): JM> the suggestion is that the performance itself traverses a path as it is created, and since the subject is engaged in this performance, the subject's own path can be determined from that of the performance".

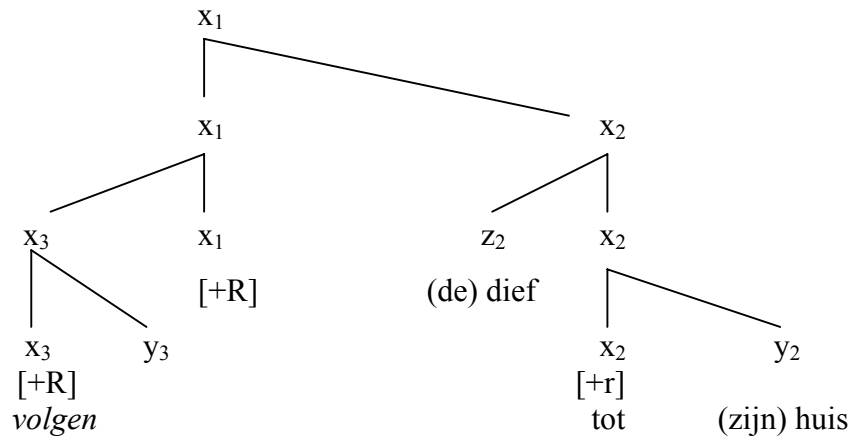
Rappaport Hovav & Levin (2001:771)

Notice that if my claim that (40a) *The wise men followed the star out of Bethlehem* is in fact a disguised unaccusative sentence, those comments emphasized in (61) above do not hold for this sentence: in this unaccusative sentence the location of the (derived) subject is *directly* determined, since the subject is *structurally* interpreted as the Figure of the motion event. By contrast, in (58c) the location of the subject (i.e., 'de politie') is not *directly* determined: i.e., this subject is not *structurally* interpreted as the Figure of the motion event, but as the agent of the pursuit. My claim is then that the formation of a transitive Small Clause Result construction like that in (58c) involves the conflation of two different argument structures (cf. (62a) and (62b)) via a generalized transformation, the result being represented as an adjunction process (see (63)): that is to say, the subordinate eventive head depicted in (62b), which is typically associated to an activity of 'DOing pursuit', is conflated into the null eventive head of the main transitive argument structure depicted in (62a), the resulting complex argument structure in (63) being associated to an accomplishment.²⁹²



²⁹² As usual, recall that the external argument (i.e., 'de politie') is to be introduced by the relevant functional projection (Chomsky (1995)).

(63)

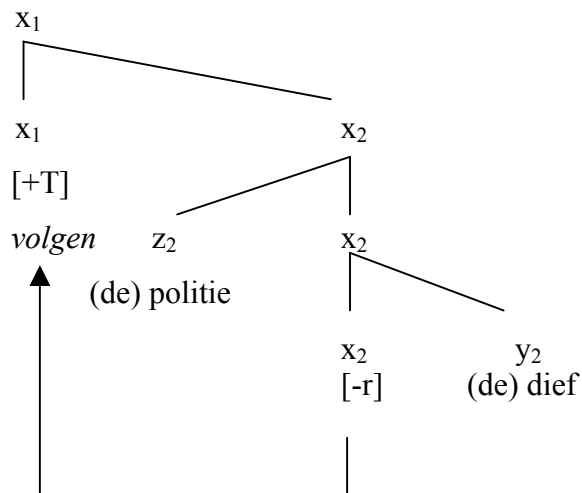


Accordingly, notice that the resulting complex argument structure in (63) can be argued to reflect the relevant descriptive comments in (61) *in a configurational way*, the desired result being that the DOR has been preserved.

If our analysis is on the right track,²⁹³ those three simplified structures in (58) are then to be translated into the following argument structures depicted in (64), respectively.

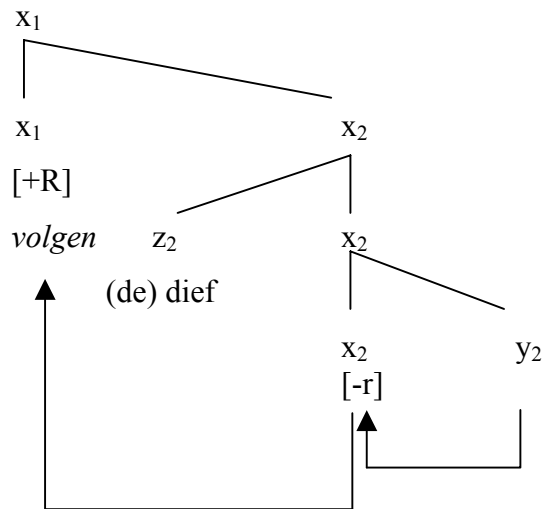
(64)

a. Unaccusative structure (cf. *volgen* as *GO+AFTER*)

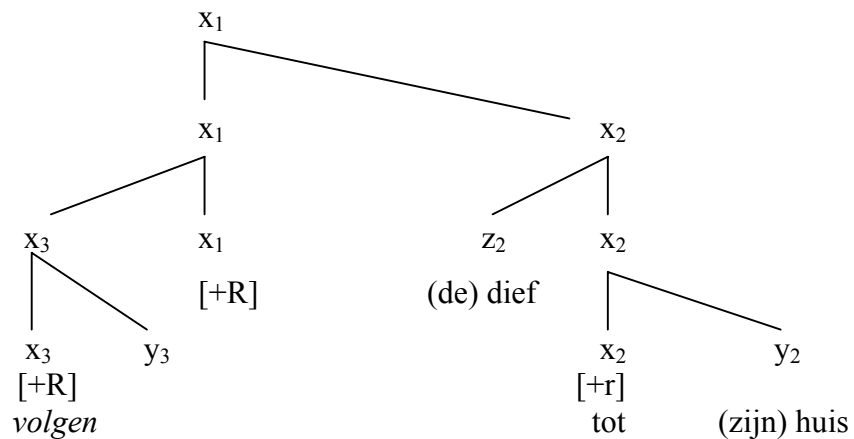


²⁹³ I am aware that more research is need here in order to validate the existence of those three possible analyses given in (58).

b. (Simple) transitive structure (cf. *volgen* as *PROVIDE+WITH+PURSUIT*)²⁹⁴



c. (Complex) transitive structure (cf. *volgen* as *DO+PURSUIT*)²⁹⁵



Let me conclude this section by pointing out that the unaccusative use of the verb *follow* is not a quirk of Dutch: quite interestingly, the German examples in (65) also show the relevant contrast in a more transparent way. Notice that the unaccusative use of the verb *follow* is related to dative case assignment and BE-selection, while the transitive use (the prefix *ver-* acting as a transitivizer)²⁹⁶ is related to accusative case assignment and HAVE-selection.

²⁹⁴ As usual, recall that the external argument (i.e., 'de politie') is to be introduced by the relevant functional projection (Chomsky (1995)).

²⁹⁵ Cf. the previous footnote.

²⁹⁶ Cf. Zeller (2001a); see also section 3.2 above.

- (65) a. Die Polizei ist dem Dieb zu seinem Haus gefolgt. (German)
the police IS de thief_{dat} to his house followed
- b. Die Polizei hat den Dieb zu seinem Haus verfolgt.
the police HAS de thief_{acc} to his house VER-followed
- (Heiner Drenhaus, p.c.)

4.4. Conclusions

Unlike Rappaport Hovav & Levin (2001), I have argued that the DOR, i.e., the main tenet of syntactic account(s) of English resultatives, is *not* challenged by apparently problematic examples such as those reviewed in their work (e.g., cf. (16)). I have also posited that the same syntactic restriction holds for the *way*-construction examples (cf. (17)). In particular, complex resultative-like constructions like those in (16)-(17) have been argued to involve the conflation of a subordinate unergative argument structure expressing an activity into the phonologically null eventive head of a main transitive argument structure, the resulting complex argument structure expressing an accomplishment.

Chapter 5. Climbing to the end

This final chapter provides an extensive recapitulation of some relevant theses worth being drawn from the present work. Since this chapter is mainly intended for that reader who does not want to spend time reading a 300-pages work on lexical decomposition issues, but nonetheless wants a very detailed summary of it, I will try to do my best in order for him/her to have a sufficient grasp of what this work deals with (needless to say, connoisseurs of the literature on the syntax-lexical semantics interface are strongly encouraged to read all the chapters!). To accomplish such a pedagogical task, I have decided to exemplify the main theses argued for here by providing a relational syntactic and semantic analysis of one of my favorite case studies: i.e., the verb *climb* (cf. Jackendoff (1985, 1990) for a conceptual approach; see also Mateu (1997, 1999) for a relational semantic approach, and Mateu (2000a) for a lexical syntactic account).

In section 5.1 I review Jackendoff's (1990) conceptual analysis in order to provide the reader with some relevant background. In section 5.2 I provide a brief sketch of the theory of argument structure developed in chapter 1 above. In section 5.3 I put forward my alternative analysis of the verb *climb* by paying special attention to (i) the distinction argued for in chapter 1 above between non-syntactically transparent conceptual content and syntactically transparent semantic construal (to put it roughly, a similar/identical conceptual scene can be semantically construed in more than one way: cf. *The adventurer climbed the mountain* vs. *The adventurer climbed to the top of the mountain*), (ii) the relational semantic determinants of aux-selection analyzed in chapter 2 above (cf. Dutch *De avonturier heeft geklommen* 'The adventurer HAS climbed' vs. *De avonturier is naar de top geklommen* 'The adventurer IS to the top climbed'), and (iii) the conflation processes involved in telic Path of motion constructions (cf. *The adventurer climbed to the top*), complex resultative constructions (cf. *The adventurer climbed his feet sore*), and in the so-called *way*-construction (cf. *The adventurer climbed his way to the end*). Section 5.3 also reviews the explanation argued for in chapters 3 and 4 above of why these conflation processes are typically absent from Romance languages like Catalan. Finally, in section 5.4 I review the relational syntax and semantics of an otherwise "appropriate" progressive construction like *I am climbing to the end* (cf. chapter 2 above).

5.1. Jackendoff's conceptual approach to 'multiple argument structures': The case of *climb*

In this section I review Jackendoff's (1985, 1990) conceptual analysis of the verb *climb*. Consider the examples in (1), drawn from his 1990 book:

- (1) a. Joe climbed (for hours).
 b. Joe climbed the mountain
 c. Joe climbed $\left. \begin{array}{l} \text{down the rope.} \\ \text{along the ridge.} \\ \text{through the tunnel.} \\ \text{etc.} \end{array} \right\}$
- Jackendoff (1990: 76: ex. (22))

Adopting a lexicalist analysis, Jackendoff proposes the unification device in the Lexical Conceptual Structure in (2) to account for the argument structure alternations in (1). According to his notation, the Path-constituent in (2) abbreviates the two possibilities in (3): (3a) corresponds to (1b), and (3b) corresponds to (1a) and (1c). In (1a), the Path is said to be unspecified.

- (2) $\left(\begin{array}{l} \text{climb} \\ \text{V} \\ \text{_____} \langle \text{XP}_j \rangle \\ [\text{Event GO} ([\text{Thing} \quad]_i, [\text{Path}\{\text{TO} ([\text{Place TOP-OF} ([\text{Thing} \quad]_j)])\}]\{t\})] \end{array} \right)$

- (3) a. $[\text{Path TO} ([\text{Place TOP-OF} ([\text{Thing}]_j)])]$
 b. $[\text{Path} \quad]_j$ Jackendoff (1990: 76-77: exs. (24,25))

On the other hand, Jackendoff refines upon the conceptual analysis of *climb* in (2) in order to capture the prototypicality effects shown by this lexical element: see his examples in (4). As emphasized by Jackendoff, the conceptually-based lexical decomposition is not to be based on traditional feature systems nor guided by the criterion of necessary and sufficient conditions. Rather it is to be based on a 'preference rule system' (cf. Jackendoff (1983)).

- (4) a. Bill climbed (up) the mountain.
b. Bill climbed down the mountain.
c. The snake climbed (up) the tree.
d. ?* The snake climbed down the tree.

Jackendoff (1990: 35: ex. (24))

The preference features that Jackendoff assumes to be involved in *climb* (i.e. traveling *UPWARD* and motion through *CLAMBERING*) are both present in (4a), which is an example of ‘stereotypical’ climbing. When only one condition is respected (e.g. (4b) or (4c)), the example is judged to be sufficient for a positive judgement as well. When both conditions are violated, the instance cannot at all be characterized as climbing (e.g. (4d)).

All in all, notice that the conceptual analysis of (2) *plus* its associated prototypicality effects relate well with our intuitions about our background knowledge concerning the verb *climb*. Indeed, I do not pretend to deny the value of Jackendoff’s insights on his own conceptual analysis. However, as shown in chapter 1 above, my approach diverges greatly from Jackendoff’s in the analysis of the status of argument structure in linguistic theory: argument structures are not to be drawn from non-linguistic conceptual structures à la Jackendoff. Rather they are to be seen as structures that encode aspects of both relational syntax and relational semantics in quite an homomorphic way.²⁹⁷

Before providing my alternative analysis of the verb *climb*, it will then be useful to review the basic elements of the theory of argument structure argued for in chapter 1 above.

5.2. The basic elements of argument structure

The purpose of this section is to show that there is a strong homomorphism between the relational syntax and semantics of argument structure. My proposal partakes in both Hale & Keyser’s (1998, 1999a) syntactic theory of the basic argument structure

²⁹⁷ Cf. Bouchard (1995), Baker (1997), Mateu (1999), and Mateu & Amadas (2001) for relevant discussion on the homomorphism between syntactic and semantic structures.

types and Mateu's (1999) semantic theory of argument structure, where certain meanings were associated with certain structures.

According to Hale & Keyser (1998), the argument structure relations a head X can enter into are those in (5): In (5a) X only takes a complement; in (5b) X takes both a complement and a specifier; in (5c) X only takes a specifier; finally, in (5d) X is a non-relational element.²⁹⁸

- (5) a. [$_X$ X Y] b. [$_X$ Z [$_X$ X Y]] c. [$_V$ Z [$_V$ V X]] d. X

In order for my proposal concerning homomorphism to come to the fore, an important reduction or modification of (5) appears to be necessary. In chapter 1 above and elsewhere I have argued that the lexical head X in (5c) is not a primitive element of the argument structure theory, as in Hale & Keyser's approach, but a composite unit. The secondary lexical category *Adjective*, which semantically expresses a state, can be argued to be decomposed into two elements: a non-relational element (similar to that instantiated by N) *plus* a relational element (similar to that instantiated by P), the former being conflated into the latter. That is, my claim is that the structural combination in (5b) can also be argued to account for the argument structure properties of Adjs. Accordingly, the small clause-like argument structure involved in two examples such as those in (6a-6b) turns out to be the same, that in (6c). Quite interestingly, the conflation of Y into X in (6c) accounts for both the *relational* nature of Adjs, which these share with P , and their *nominal* properties in languages like Latin, where these are marked with morphological case.

- (6) a. is [the cat [in the room]]
 b. is [the cat [happy]]
 c. is [$_X$ Z [$_X$ X Y]]

²⁹⁸ It is important to note that the universal argument structure categories in (5) must not be mixed with their language-specific *morphosyntactic* realizations: their morphosyntactic realization in individual languages as Vs, Ps, and so on, is a parametric issue (see Hale & Keyser (1998) for relevant examples). Due to my concentrating on the relation between the syntax and semantics of argument structure, here I will not be concerned with the morphosyntactic realizations of these lexical elements.

As noted in chapter 1 above, Hale & Keyser would not be happy with such a modification or reduction, since the causative alternation is presented by them as an important point for maintaining the distinction between those denominal verbs that involve merge of (5b) into (5a) (see (7a)), and those transitive deadjectival verbs that involve merge of (5c) into (5a) (see (7b)). According to them, this explains why the former are always transitive, whereas the latter have an intransitive variant (the α verbal head being then inflected with Tense).

- (7) a. *([_V [_V e]] [_P N [_P e] [_N shelf]]) John shelved the books; *the books shelved
 b. ([_V [_V e]] [_V N [_V e] [_A clear]]) John thinned the sauce; the sauce thinned

However, as argued by Kiparsky (1997) and Mateu (2001b), Hale & Keyser's structurally-based generalization is not fully well-grounded: Denominal verbs *can* participate in the causative alternation if they denote events which can proceed without an explicit animate agent (e.g., *pile (up)*, *carbonize*, *oxidize*, etc.) On the other hand, there are deadjectival verbs that *cannot* participate in such an alternation (e.g., *legalize*, *visualize*, etc.).

Given this, the relevant conclusion drawn from section 1.3 above is the following one: The fact that transitive denominal verbs like *shelve* or *saddle* do not enter into the causative alternation is not due to a structural reason, as Hale & Keyser argue, but to the fact that they typically involve an animate agent (cf. also Levin & Rappaport Hovav (1995: chap. 3)). Therefore, the main objection that Hale & Keyser could entertain with respect to my eliminating the apparently basic combination of (5c) vanishes. This reduction accepted, the basic, irreducible argument structure types turn out to be those in (8):

- (8) a. [_X X Y] b. [_X Z [_X X Y]] c. X

The reduction of (5) to (8) allows homomorphism to come to the fore, this being expressed in (9). Given (9), the relational syntax of argument structure can be argued to be directly associated to its corresponding relational semantics in quite a uniform way.

- (9) a. The lexical head X in (8a) is to be associated to an *eventive relation*.
 b. The lexical head in (8b) is to be associated to a *non-eventive/spatial relation*.
 c. The lexical head X in (8c) is to be associated to a *non-relational element*.

In turn, the eventive relation, which is uniformly associated to the X in (8a), can be instantiated as two different semantic relations (see (9a') below): 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'.

If there is no external argument, the eventive relation will be instantiated as a *transitional* relation. The transitional relation always selects a non-eventive *spatial* relation, whose specifier and complement can be interpreted as 'Figure' and 'Ground', respectively (this terminology being adapted from Talmy (1978, 1985)).

- (9) a'. The lexical head X in the configuration in (8a) is to be associated to an *eventive relation*: if there is an external argument, X is interpreted as a *source relation*; otherwise, it is interpreted as a *transitional relation*.²⁹⁹

Let me then comment on briefly some relevant aspects of the resulting argument structures in (10):

- (10) a. transitive structure: $[_F Z_1 [_F F [_{X_1} X_1 [_{X_2} Z_2 [_{X_2} X_2 Y_2]]]]]$
 b. unergative structure: $[_F Z_1 [_F F [_{X_1} X_1 Y_1]]]$
 c. unaccusative structure: $[_{X_1} X_1 [_{X_2} Z_2 [_{X_2} X_2 Y_2]]]$

The main structural difference between transitive structures (see (10a)) and unergative structures (see (10b)) is based on the type of complement selected by the source relation: in (10a) a non-eventive relation X_2 is selected as complement, while in (10b) a non-relational element Y_1 is selected, the latter being interpreted as an 'Incremental Theme' (cf. Harley (2001, 2002)). Moreover, notice that the transitive

structure in (10a) can be argued to partake in both an unergative structure (notice that it includes the source relation to be associated to an external argument Z_1 via F) and an unaccusative structure (notice that it includes the non-eventive relation X_2).

On the other hand, it is clear that there must be a compatibility between the configurational meaning that can be read off the mere argument structures in (10) and the non-configurational one expressed via the binary relational semantic features in (11) (cf. the relevant discussion on the examples in (54) in chapter 1 above).³⁰⁰

- (11) [+R]: positive semantic value associated to the source relation
 [-R]: negative semantic value associated to the source relation
 [+T]: positive semantic value associated to the transitional relation
 [-T]: negative semantic value associated to the transitional relation
 [+r]: positive semantic value associated to the non-eventive relation
 [-r]: negative semantic value associated to the non-eventive relation

Lexical items are argued to be associated to the relational semantic features in (11) in virtue of the 'lexical licensing' sketched out in (12), which sanctions their corresponding argument structures in (13).³⁰¹

²⁹⁹ See Harley (1995) for a similar view.

³⁰⁰ See Mateu (1997, 1999) for the proposal that the [+r] and [-r] features are correlated to Hale & Keyser's (1993f.) 'terminal coincidence relation' and 'central coincidence relation', respectively. See Hale (1986) for relevant discussion on these grammatically relevant semantic relations. One caveat is in order here: quite probably, more refinements will be shown to be necessary here. For example, I surmise that more complex hierarchies of spatial features will be necessary when trying to relate Hale & Keyser's notions of 'terminal/central' coincidence relations with Jackendoff's (1983, 1990) different types of 'paths' and 'places'. I leave this topic for future research.

On the other hand, the [+R] feature subsumes both the CAUSE function and the agentive {ACT/DO} function, while the [-R] feature subsumes the HAVE function (cf. transitive stative verbs like *fear*) and whatever (standard?) function is assigned to non-agentive unergative verbs (e.g., verbs of smell emission like *stink*).

Finally, [+T] and [-T] subsume the {GO/BECOME/CHANGE} and {BE/STAY} functions, respectively.

³⁰¹ As noted in chapter 1 above, I assume Levin & Rappaport Hovav's (1995) claim that *roll*-verbs are unergative in their agentive use (cf. *John rolled deliberately*), but unaccusative otherwise (cf. *The ball rolled*): cf. section 2.2.2 above for relevant empirical evidence in favor of this claim. Moreover, here I also assume their perhaps more controversial proposal that 'verbs of existence' like *live* are unaccusative: cf. section 2.2.4 for more discussion.

On the other hand, see Hale & Keyser (1999b) for the lexical syntactic analysis of transitive verbs like *to push* and *to fear*. According to them, the 'impact noun' *push* and the 'psych nominal' *fear* must be linked to their source, the external argument, i.e., the s(entential)-syntactic subject. These nominal roots are supplied with a bracketed subscript representing a variable which must be bound *obviatively*. See Hale & Keyser (1999b) for more details.

(12)	<i>Descriptive label</i>	<i>RelSem features</i>	<i>Example</i>
a.	telic causative verbs	[[+R] [+r]]	<i>KILL</i>
b.	atelic agentive transitive verbs	[[+R] [-r]]	<i>PUSH</i>
c.	atelic stative transitive verbs	[-R] [-r]]	<i>FEAR</i>
d.	agentive unergative verbs	[+R]	<i>ROLL</i>
e.	non-agentive unergative verbs	[-R]	<i>STINK</i>
f.	telic unaccusative verbs	[[+T] [+r]]	<i>DIE</i>
g.	atelic dynamic unaccusative verbs	[[+T] [-r]]	<i>ROLL</i>
h.	atelic stative unaccusative verbs	[-T] [-r]]	<i>LIVE</i>

(13)	a.	([_F Z ₁])	[_{X1} [+R]	[_{X2} Z ₂ [_{X2} [+r] <i>KILL</i>]]]]
	b.	([_F Z ₁])	[_{X1} [+R]	[_{X2} Z ₂ [_{X2} [-r] <i>PUSH_i</i>]]]]
	c.	([_F Z ₁])	[_{X1} [-R]	[_{X2} Z ₂ [_{X2} [-r] <i>FEAR_i</i>]]]]
	d.	([_F Z ₁])	[_{X1} [+R]	<i>ROLL</i>]]
	e.	([_F Z ₁])	[_{X1} [-R]	<i>STINK</i>]]
	f.		[_{X1} [+T]	[_{X2} Z ₂ [_{X2} [+r] <i>DIE</i>]]]]
	g.		[_{X1} [+T]	[_{X2} Z ₂ [_{X2} [-r] <i>ROLL</i>]]]]
	h.		[_{X1} [-T]	[_{X2} Z ₂ [_{X2} [-r] <i>LIVE</i>]]]]

5.3. Argument structure and lexical decomposition: The case of *climb* revisited

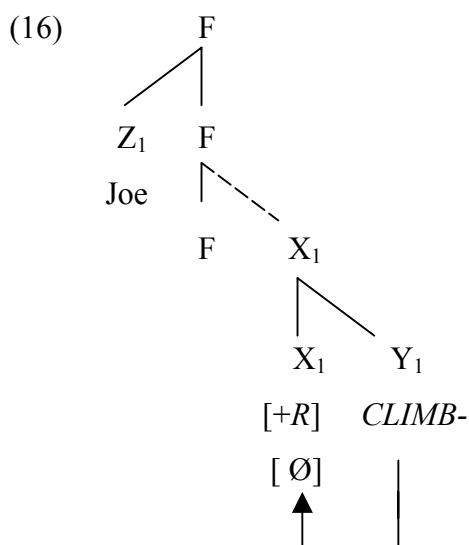
With this sketchily reviewed theoretical background in mind, let us now deal with our particular case study. I have argued that complex lexical items (e.g., cf. (13)) involve a minimal lexical decomposition that is syntactically transparent (cf. also von Stechow (1995) for related discussion). However, as emphasized by Travis (2000) and Mateu (2000a), such an enterprise is not to be mixed with that carried out by Generative Semanticists *in illo tempore*: that is to say, we do *not* pretend to syntacticize *all* aspects of meaning, but only a minimal part of it (i.e., the grammatically relevant one). Moreover, I claim that our intuitions on non-syntactically transparent semantic representation and background knowledge must be put aside, and only semantic facts that have an explicit or implicit (morpho)syntactic basis must be taken into account when working out argument

structures via lexical decomposition. For example, let me exemplify it with the analysis of the verb *climb* in its use in (1a), repeated in (14) below. The three ‘unaccusative diagnostics’ in (15) (auxiliary selection in (15a), postverbal subjects without determiner in (15b), and absolute participial clauses in (15c)) should be enough to show that *climb* in (14) projects an unergative structure.

(14) Joe climbed (for hours).

- (15) a. Gianni ha/*è scalato. (cf. ^{ok}Gianni è arrivato) Italian
 Gianni HAS/*IS climbed Gianni IS arrived
- b. *Escalaron niños. (cf. ^{ok}Llegaron niños) Spanish
 climbed-3rd.pl children arrived children
- c. *Una vez escalados los niños, ... (cf. ^{ok}una vez llegados los niños,...)
 once climbed the children,.. once arrived the children,...

As noted in section 5.2, I argue that unergative verbs like *climb* in (14) project the argument structure in (16), the argument *Joe* being introduced by the relevant *Functional* projection.³⁰² Following Hale & Keyser (1998, 2000a), I also assume that the empty phonological matrix associated to the eventive head X_l forces the copy of the phonological label of Y_l into X_l .



³⁰² For arguments in favor of ‘severing’ (*sic*) the external argument from the lexical structure, see Kratzer (1996), among others.

On the other hand, if we are willing to respect the homomorphism between the relational syntax and semantics of argument structure, notice that it would seem more appropriate to associate the structure in (16) to a *source* relation plus its non-relational complement, which expresses a nominalized event (cf. (17a): *DO CLIMB*), rather than to a transitional function (i.e., *GO*) plus an unspecified path: cf. Jackendoff's CS analysis in (2), simplified in (17b) below. Despite appearances, I argue that the eventive relation involved in (14) is *not* a transitional one, but rather a source one.

- (17) a. $[X_1 X_1 [+R] CLIMB]$
 b. $[Event GO ([Thing \quad]_i, [Path \quad])]$; cf. (2)/(3b)

As far as the argument structure is concerned, I claim that the syntactically transparent lexical decomposition of (14) stops at the coarse-grained level of (17a) (cf. chapter 1 above for relevant discussion of Fodor & Lepore's (1999) arguments against Hale & Keyser's (1993) lexical syntactic decomposition).³⁰³

³⁰³ To be sure, even though accepting that there is a minimal lexical decomposition that is syntactically transparent, one could continue claiming that there is no problem in principle with accepting Jackendoff's further non-syntactically transparent conceptual analysis (I am grateful to M. Teresa Espinal for reminding me of this point). However, it should be clear that my position is that argument structures are not to be drawn from *non-linguistic* conceptual structures like those envisioned by Jackendoff (cf. (i) below)). Rather they are to be seen as *linguistic* structures that encode aspects of both relational syntax and relational semantics in quite an homomorphic way. This point accepted, I tend to agree with those that think that a Fodorian position must be adopted with respect to further decomposing roots (e.g., cf. those italicized ones in (13)) via semantic/conceptual primitives (cf. Harley & Noyer (2000) and Marantz (2000) for a similar position). But see Wierzbicka (1996) or Goddard & Wierzbicka (1994, 2002) for a very different approach to lexical decomposition.

(i) "I agree with Chomsky that, although conceptual structure is what language *expresses* <his emphasis: JM>, it is not strictly speaking a part of the language faculty; it is language independent and can be expressed in a variety of ways, partly depending on the syntax of the language in question. I take conceptual structure to be a central cognitive level of representation, interacting richly with other central cognitive capacities (...). Language is not necessary for the use of conceptual structure: it is possible to imagine nonlinguistic organisms such as primates and babies using conceptual structures as part of their encoding of their understanding of the world". Jackendoff (1997a: 33)

Indeed, it is far from clear to me that a conceptual representation like that described in (i) above should be characterized via Jackendovian CS primitives. But this is a mysterious point I would not like to enter into discussing here. If interested, the reader can contrast Jackendoff's (1983, 1990, 1992, 1997a, 2002) views on conceptual representation with those very different ones found in Lakoff (1987, 1990), Johnson (1987), and Lakoff & Johnson (1999). Cf also Langacker's (1987a, 1991, 1999) pathbreaking work on imagistic conceptualization, which can be argued to be quite compatible with Lakoff & Johnson's work on metaphors and image-schemas (cf. Lakoff (1990) for interesting links between these two cognitive approaches). Cf. also the (1996) *Cognitive Linguistics* volume devoted to Jackendoff's work (unfortunately, such a special issue lacks representative papers by Langacker or Lakoff).

On the other hand, notice that there is no *morphosyntactic* evidence in (1a) nor in (1b), repeated in (18) below, which can be said to lead us to refute Talmy's (1985, 1991, 2000) claim that physical paths do not typically conflate into the motion verb in a Germanic language like English (Romance borrowings like *enter* or *exit* must be put aside here).

- (18) a. Joe climbed.
 b. Joe climbed the mountain.

Indeed, in (18b) *Joe* can be said to be the entity that has moved to the top of the mountain, as is reflected in Jackendoff's partial analysis in (3a), repeated in (19):

- (19) [Path TO ([Place TOP-OF ([Thing]j)])]

However, I want to argue that the description of this fact has been 'construed' not in (18b), but rather in (20).

- (20) Joe climbed to the top (of the mountain).

To put in Langacker's (1987a, 1991, 1999) insightful terms of (21), both (18b) and (20) can be argued to refer to a similar *conceptual* scene, but they represent two different *semantic* construals of such a conceptual scene.³⁰⁴

³⁰⁴ Notice the importance of drawing the relevant theoretical distinctions *before* being faced with the empirical data. Indeed, an adequate analysis of minimal pairs like those in (18)-(20) implies that a prior theoretical distinction must be drawn between a (syntactically transparent (cf. Bouchard (1995) or Mateu (1997f.)) or not syntactically transparent (cf. Pinker (1989), Bierwisch (1996) or Croft (1998)) semantic structure and a non-linguistic conceptual structure. In contrast to the Langackerian position argued for by Croft (1998, 2001) (cf. (i) below), Jackendoff adopts the controversial position that that no difference must be established between (linguistic) semantic structures and (non-linguistic) conceptual structures (basically, cf. Jackendoff (1983)).

(i) "(...) a linguistic semantic representation involves a construal of a 'raw' conceptual representation. Hence I am taking the position that a (linguistic) semantic representation of an event is distinct from its conceptual representation. This position is taken by linguists ranging from Bierwisch to Langacker (but not Jackendoff). The relationship between semantic structure and conceptual structure here is closer to that of Langacker (1976) however. Although conceptual structure and the construal operations are hypothesized to be universal, the conceptualization of particular event types is conventional and language-particular (Langacker calls this conventional imagery: Langacker 1987: 38)".
 Croft (1998: 24)

Although I disagree with Croft and Langacker concerning their conception of what grammar is (e.g., cf. Croft (2001) for a severe critique of modern syntactic theory), it should be clear that I am sympathetic to the view expressed in (i).

(21) Meaning is a function of both conceptual content and semantic construal.

Quite importantly, I am not just claiming that (18b) and (20) differ with regard to syntactic structure. Due to my assuming an homomorphism between the relational syntax and semantics of argument structure, I am also led to conclude that (18b) and (20) differ semantically as well. As argued in section 1.5 above, (21) is to be expressed as (22) in the present framework:

(22) Meaning is a function of both (non-syntactically transparent) *conceptual content* and (syntactically transparent) *semantic construal*.

As emphasized above, lexical decomposition should not be carried out from our mere "localistic" intuitions on conceptual representations, but rather from morphosyntactic facts whose corresponding semantics can be worked out on an *empirical* basis.³⁰⁵ For example, the auxiliary selection test analyzed in section 2.2. above will be shown to be useful for us to establish the proper distinctions concerning the different relational syntax *and* semantics of the argument structures of (18b) and (20). Consider the Dutch data in (23):

- (23) a. De avonturiers hebben de Mt. Everest beklommen. (Dutch)
the adventurers HAVE the Mt. Everest BE-climbed
b. De avonturier is *(naar de top) geklommen.
the adventurer IS to the top climbed
c. De avonturier heeft/*is geklommen (gedurende vele uren).
the adventurer HAS /*IS climbed for many hours

ex. (23a) taken from Hoekstra (1999: 71; ex (1c))

exs. (23b,c) due to Gretel de Cuyper (p.c.)

³⁰⁵ To be honest, let me point out that I am aware that some tenets of the present theory of lexical decomposition have not been shown to be empirically grounded in their full sense: e.g., cf. the tenet that 'all eventive heads have a complement position' (but let me add that I have been unable to find convincing arguments against such a hypothesis). Indeed, some tenets are assumed here in order to *constrain* the theory properly, this being made on the basis that only highly restrictive theories can be argued to explain the empirical facts in an adequate way. When faced with the choice between a theory that *appears* to work but whose predictive and restrictive power is limited, and a theory that is highly restrictive and predictive but whose empirical coverage *appears* to be limited, I invariably choose for the latter.

As reviewed in section 2.2 above, the aux-selection contrasts in (23) are nicely accounted for by Hoekstra (1984, 1999) and Mulder (1992): while in (23a,c) the subject acts as a true external argument of the verb *klimmen* 'climb' (*hebben* 'HAVE' being selected), in (23b) *de avonturier* is not to be analyzed as an external argument but as the inner subject of the prepositional SC predicate (i.e., *naar de top*). Hence the unaccusative behavior of the verb in (23b) is predicted: *zijn* 'BE' is selected. The resulting simplified structures are given in (24):³⁰⁶

- (24) a. De avonturiers... [v klimmen [sc Mt. Everest be-]] (*hebben* selected)
 b. [v klimmen [sc de avonturier naar de top] (*zijn* selected)
 c. De avonturier... [v klimmen] (*hebben* selected)

As a first rough approximation, the simplified structures in (24) could be said to correspond to the argument structures in (25) when adapted to the present framework:

- (25) a. ([_FDe avonturiers [_F F] [_{X1} klimmen_[+R] [_{X2} Mt-Everest [_{X2} X_{2[+r]} be-]]]])
 b. [_{X1} klimmen_[+T] [_{X2} avonturier [_{X2} naar_[+r] top]]]
 c. ([_F de avonturier [_F F] [_{X1} klimmen_[+R] *t_i*]]) cf. (16)

Notice that the argument structures in (25) explicitly account for the semantic determinants of aux-selection analyzed in section 2.2 above: other things being equal, the [+R] feature associated to both core transitive and unergative verbs is the main semantic determinant of HAVE selection, while the [[+T][+r]] combination associated to core unaccusative verbs is the main semantic determinant of BE selection (see section 2.2.2 for how to deal with non-core cases, i.e., those involving a negatively specified relational semantic feature).

Despite the merits of (24) and/or (25), some non-trivial questions must still be addressed: e.g., what allows the simple verb in (24c) to be integrated into the unaccusative structure in (24b)? Indeed, one could argue that such an integration is

³⁰⁶ See Hoekstra (1992) and Mulder (1992) for evidence in favor of considering the prefix *be-* as the SC predicate. I will not review their arguments here.

allowed in virtue of a feature shift involved in (25b), one from [+R] to [+T].³⁰⁷ However, such a proposal is not allowed in the present framework due to its unrestricted character.

Alternatively, a more attentive reader who is also well versed in Langacker's work could entertain the interesting proposal that there is a different *semantic construal* involved in the minimal pair of (23b) and (23c): while an 'energetic process' is 'profiled' in (23c), it is an 'absolute thematic process' that is 'profiled' in (23b).³⁰⁸ Here those syntacticians who follow Hoekstra and are sympathetic towards my analysis in (25) protest: is not that a mere roundabout way of positing the same that is already syntactically transparent in (24)/(25)? That is, the activity component associated to the verb in (24c) is not syntactically "active" in (24b), the agent role being not assigned in the syntax. To put it in my terms in (25), the [+R] feature lexically assigned to the unergative verb *klimmen* in (25c) is not active in the unaccusative argument structure in (25b), the more relevant feature being [+T], not [+R].

To be sure, I think that those two reasonings characterized above are mostly correct, even though being expressed in very different terms. Notice however that they do not address the real puzzle that is implicitly involved in the question. Let us then repeat the same question with the 'puzzle' being made explicit: i.e., what allows the unergative verb in (24c)/(25c) to be integrated into the unaccusative structure in (24b)/(25b) ***in some languages (cf. the Germanic family) but not in others (cf. the Romance one)?***

³⁰⁷ Those who are willing to state that question in aspectual terms (e.g., 'What allows an activity verb like *klimmen* in (23c) to shift into an accomplishment when a telic directional PP is added?') are strongly encouraged to take a look at Mateu & Rigau's (2000) paper and/or my chapter 3 above: despite its intuitive plausibility, the event type-shifting analysis is *empirically* shown to have no explanatory value when a broader typological perspective like that adopted by Talmy (1991) is taken into account (cf. *infra*). Indeed, the error of those advocating an event type-shifting analysis is their considering the telic PP/AP as the "added" element. In contrast to this analysis, in chapter 3 above I have put intuitions aside arguing that it is the activity verb that must be considered as the "added" element.

As noted in chapter 3 above, my present analysis could be regarded as compatible with Goldberg's (1995) constructional analysis: it is not the case that the *constructional meaning* associated to the telic directional PP is "added" to the *verbal meaning* associated to the verb. If any, the opposite holds.

³⁰⁸ One caveat is in order here: Those readers who are not familiar with Langacker's work should not interpret his notion of *process* on the basis of current aspectual terms (e.g., 'process' = 'activity'), but rather as a *temporal relation*.

The Langackerian linguist is not surprised: for him/her it is a tenet of his theory that construal is a matter of language-specific convention.³⁰⁹ Fortunately for me, though, s/he points out that there is a prominent cognitivist linguist (i.e., Talmy (1985f)) who has unraveled some relevant typological generalizations that could be at issue here.

On the other hand, generative syntacticians react differently from their cognitivist colleagues. Fortunately for me, generative syntacticians appear to be much more worried about the previous crosslinguistic point. Unfortunately for me, most of them are not familiar with Talmy's (1985ff.) typological work.

Let us then make a brief sketch of Talmy's (1991) typological distinction between 'satellite-framed languages' (e.g., Dutch or English) and 'verb-framed languages' (e.g., Catalan or Spanish), which is assumed in my chapters 3 and 4 above. Here I will exemplify it with the relevant examples in (26).³¹⁰

- (26) a. De avonturier is naar de top geklommen. (Dutch)
 the adventurer is to the top climbed
 a.' De avonturier is (al) klimmend naar de top gegaan.
 the adventurer is climbing to the top gone
 b. L'aventurer pujà al cim (escalant) (Catalan)
 the adventurer went-up loc.prep-the top (climbing)
 b.' *L'aventurer escalà al cim (*on the directional reading)
 the adventurer climbed loc.prep-the top

Talmy's term of 'satellite' is quite transparent: quite typically, in Germanic languages like Dutch or English, the Path element is not conflated into the verb but is left stranded as a satellite around it (cf. *naar* 'to' (26a,a')). Given this, the typical 'non-conflating' (i.e., satellite) nature of the Path element in Germanic languages

³⁰⁹ Cf. the relevant quotes drawn from Langacker (1987a: 63/66): "<Section> 2.1.4. *An Inventory of Conventional Linguistic Units*. As conceived in the present framework, the grammar of a language is *simply* <my emphasis: JM> an inventory of linguistic units. A grammar is not a 'generative' description, providing a formal enumeration of all and only the well-formed sentences of a language. (...) In preference to the standard term 'grammaticality' (which is both narrow and problematic), I will refer to an expression's degree of *conventionality* <his emphasis: JM>".

³¹⁰ For some relevant qualifications and apparent counterexamples, see my chapter 3 above. Here I will not review them again. But see the following footnote.

allows a subordinate event (cf. Talmy's (1991) SUPPORTING[EVENT]) to be conflated into the motion verb (MOVE).

In contrast, in verb-framed languages (e.g., Romance languages like Catalan or Spanish) the (relevant)³¹¹ Path element is conflated into the motion verb (cf. the directional verb *pujar* 'to go up'). As a result of such a conflation, no SUPPORTING[EVENT] can be conflated with MOVE.³¹²

Given these contrasts, it is clear that the Dutch verb in (26a) expresses a Manner component, this being *fully* absent from the Romance verb in (26b). Moreover, as predicted by Talmy (1985f), (26b') is ungrammatical on the relevant directional reading, i.e., that corresponding to the one in (26a).

In sum, the relevant conflation processes drawn from Talmy's (1991: 485) linguistic typology are the following ones:

- (27) a. Satellite-framed languages: conflation of MOVE with SUPPORTING[EVENT]
- b. Verb-framed languages: conflation of MOVE with Path

Accepting Talmy's (1985, 1991, 2000) insights on conflation processes, I have argued in chapter 3 above that the *descriptive* statements in (27) can be provided with a more *explanatory* basis in the formal framework sketched out in section 5.2, and developed in chapter 1 above. Quite crucially, I have posited that argument structure has two faces: a relational syntactic one (cf. Hale & Keyser (1998, 1999a)) and a relational semantic one (cf. Mateu (1999)), both faces being related in an homomorphic way. Given this assumption, I have argued that (i) my

³¹¹ Aske (1989), in an important qualification to Talmy's (1985) typology, pointed out that there are two types of Path phrases that must be distinguished (cf. also Slobin (1996b) and Mora (2001)):

- (i) a. A *one-dimensional locative path phrase* adds the "location" (i.e., the path or one dimensional region) in which the activity took place.
- b. A *telic path phrase* predicates an end-of-path location/state of the Figure.
- Both types in (i) are possible in English, but only the former type is possible in Romance.
- (ii) a. The boy danced along the tunnel.
- b. The boy danced {into the tunnel/out of the tunnel}

Quite interestingly, Aske's insight can be provided with a structural basis within the present framework: the 'telic path' *into the tunnel* in (iib) occupy a complement position inside the basic argument structure, whereas the 'atelic path' *along the tunnel* in (iia) is to be considered as an adjunct to the basic argument structure. Accordingly, (iia) is an unergative construction, while (iib) is an unaccusative one (cf. Hoekstra (1984), among others).

³¹² The adjunct expressing the SUPPORTING [EVENT] is often omitted in those cases where the translation would give an awkward result (cf. also Talmy (1985) and Slobin (1996b) for some relevant remarks).

relational semantic approach to argument structure can account for those semantic/aspectual facts associated to (27) in quite an elegant and simple way,³¹³ and that (ii) my relational syntactic approach can deal with the crosslinguistic variation involved in (27) in a more natural way than that offered from a pure lexical semantic perspective: indeed, in chapter 3 I have taken pains to show that the relational syntactic face alluded to above is crucial for us to be able to explain the relevant *parametrized variation* in a non-stipulative way.³¹⁴ Accordingly, I have argued against semanticocentric proposals of the sort that the relevant lexical {semantic/aspectual} operation applies to Germanic languages, but not to Romance languages.³¹⁵ Although these proposals can be granted descriptive value, their explanatory power has been shown to be quite limited.

With the previous background in mind, let us now deal with the conflation process involved in the complex telic Path of motion construction in (20) *Joe climbed to the top (of the mountain)*. Next I will show that a similar conflation process is appropriate for complex resultative constructions like *The inexpert adventurer climbed his feet sore* and for the so-called *way*-construction: cf. *The inexpert adventurer climbed his way to the top*. Finally, I will provide a relational syntactic and semantic analysis of the transitive variant in (18b) *Joe climbed the mountain*.

In section 3.1.3 I have argued that the parameterization of the conflation processes described by Talmy (1985ff.) is sensitive to the nature of the morphosyntactic properties associated to the birelational element expressing a telic Path (cf. my [+r]). As shown above, in Romance (e.g., Catalan), it is usually the case that the (relevant) Path component is conflated into the eventive relation: such a conflation is to be related to the verb-framed nature of Catalan. In contrast, in English the Path relation is not conflated into the verb but is left "stranded": hence its satellite-framed nature.

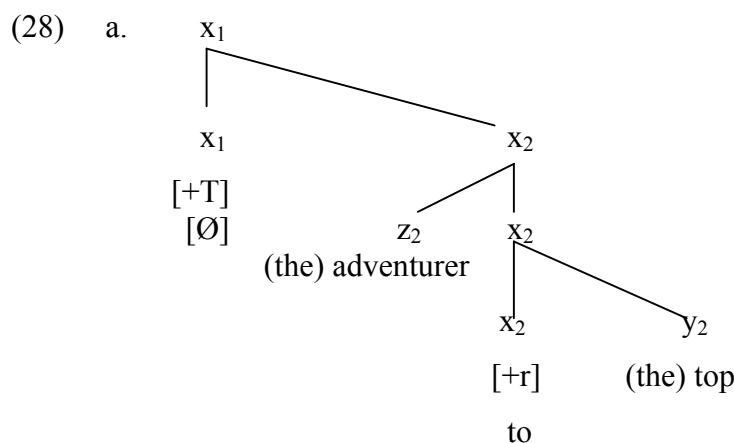
³¹³ Cf. the 'lexical subordination processes' analyzed by Levin & Rapoport (1988), Tenny (1994), Spencer & Zaretskaya (1998), and McIntyre (2002), among others.

³¹⁴ For a similar view, see Snyder (1995), Klipple (1997), Mateu & Amadas (1999a), and Mateu & Rigau (1999, 2000).

³¹⁵ Cf. Levin & Rapoport (1988), Pustejovsky (1991, 1995), Tenny (1994), Wunderlich (1997a), Kaufmann & Wunderlich (1998), Levin & Rappaport Hovav (1998), Spencer & Zaretskaya (1998), and Stiebels (1998), among others.

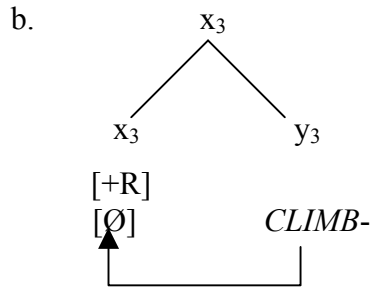
As noted by Mateu & Rigau (2002), the fact that the conflation process of Motion and Path in Romance is a fossilized process has important consequences. Given this, the morphosyntactic features corresponding to the complex head formed by *V* (i.e., the morphosyntactic realization of the transitional eventive relation) plus *P* (i.e., the morphosyntactic realization of the directional relation) cannot be distinguished any longer. For example, the Catalan verbal form *pujar* 'to go up' (cf. (26b)) is to be regarded as an atom as far as their morphophonological status is concerned: i.e., which morphophonological properties correspond to the motion verb and which ones to the directional preposition/particle cannot be distinguished.³¹⁶ In section 3.1.3 I have argued that the most important consequence of such a lexical saturation is that this fossilized lexicalization prevents Catalan from conflating the motion verb with what Talmy (1991) refers to as the SUPPORTING[EVENT]: hence the impossibility of (26b').

In contrast, in satellite-framed languages like English or Dutch the directional preposition/particle is not typically conflated into the verb. Unless the eventive head of the unaccusative argument structure structure in (28a) has phonological content (e.g., cf. *The boy went to the top (climbing)*), an independently generated argument structure object with full phonological content (e.g., cf. the unergative one in (28b)) is then required to be conflated into the non-saturated eventive head of (28a).³¹⁷



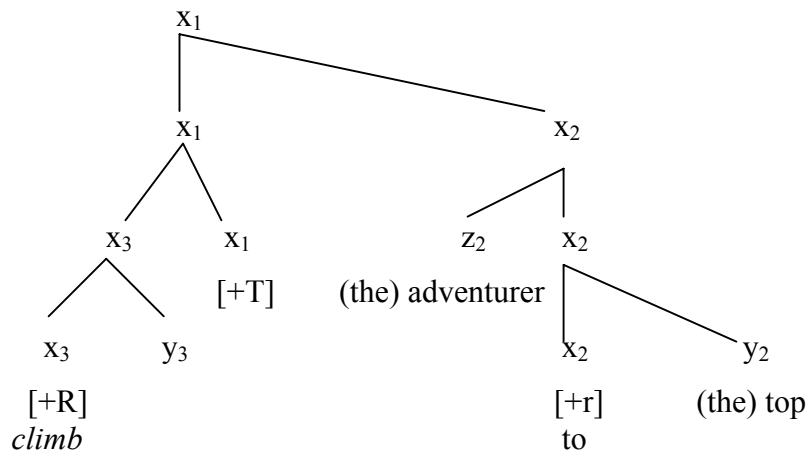
³¹⁶ See Mateu & Rigau (2002) for the claim that the preposition *a* in (26b) can be regarded as a copy of the locative relation incorporated into the verb *pujar*: cf. *L'aventurer va decidir no pujar* 'The adventurer PAST decide not go-up'. See also Tortora (1995, 2001) for related discussion.

³¹⁷ Such a requirement can be argued to be related to Hale & Keyser's (1998) external condition of avoiding phonologically empty matrices at PF.



Being inspired by an insight from Hale & Keyser (1997a: 228-229), in section 3.1.3 above I have argued that the formation of complex argument structures like the one in (29) involves a 'generalized transformation': basically, this kind of syntactic operation can be argued to take two different structures and fuse them into only one.³¹⁸ Accordingly, the resulting complex argument structure in (29) can be analyzed as involving a syntactic operation that takes the unergative structure in (28b) and conflates it into the unaccusative one in (28a). In (29) such an operation has been depicted as being carried out via an adjunction process.³¹⁹ As noted, the conflation appears to be motivated by the external reason that phonologically null matrices must be eliminated at PF. Given this, the phonological content associated to (28b) is transferred to the empty matrix of the eventive head in (28a).

(29) The adventurer climbed to the top.



³¹⁸ Quite interestingly, note that the generalized transformation operation is easily explained under Chomsky's (1995f) minimalist assumptions: Grammar appears to be organized in such a way that the computational system allows different 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 (2002)).

³¹⁹ Recall that 'Conflation' is to be seen as concomitant of 'Merge' (cf. Hale & Keyser (1998, 1999a, 2000a)).

As noted above, the relevant conflation process depicted in (29) is not available in Romance since the lexical saturation of the phonological matrix of the transitional eventive head by the Path element x_2 prevents this main unaccusative head from being conflated with a subordinate eventive head from an independent argument structure.

This said, it is now clear why Pustejovsky's (1991) or Snyder's (1995a) intuition-based observation that a process VP (e.g., *climb*) can be converted into an accomplishment VP by "adding" a telic directional PP (e.g., *to the top*) 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 into the main unaccusative structure. To put it clearly, it is the process verb *climb*, but not the telic directional phrase *to the top*, that must be regarded as the "added" element.

Concerning the semantic interpretation to be drawn from (29), it is worth noting that the analysis in (29) explains why the activity component (cf. my [+R]) associated to the verb *climb* is not the foregrounded one in (29): this component is subordinated to the transitional one (cf. my [+T]), which is associated to the main unaccusative eventive head. That is to say, not only can my analysis explain the syntactic facts (i.e., (29) is an unaccusative construction (cf. Hoesktra (1984), among others)), but the semantic ones are also explained: i.e., in the sentence in (29) the change component is foregrounded, the activity one being backgrounded.

Next let us deal with the relational syntax and semantics of complex resultative constructions like (30a) and the so-called *way*-construction (cf. (30b)).³²⁰ Following Goldberg (1995: chap. 8), I assume that AP-based resultatives involve an abstract *result-goal* (roughly, cf. 'The adventurer caused his feet **go to** the state of soreness by climbing'). To put it in our present terms, resultative constructions involve the presence of an abstract terminal coincidence relation. Given this well-known cognitive parallelism,³²¹ notice also that it should be desirable to appeal to the

³²⁰ See section 4.2 above for an in-depth analysis of the relational syntax and semantics of the *way*-construction. See also Marantz (1992) for the insight that the syntax and semantics of this idiomatic construction are very similar to the so-called 'fake object resultatives' (e.g., *John laughed himself silly*), and Goldberg (1995: 215-216) for some relevant remarks concerning the inalienable possession relation involved in both (30a) and (30b).

³²¹ To put it in Lakoff's (1990) 'M<etaphor>T<heory>' words, *CHANGES OF STATE ARE CHANGES OF DIRECTION*. Cf. also Gruber's (1965/1975) 'Thematic Relations Hypothesis', adopted by Jackendoff (1983ff.).

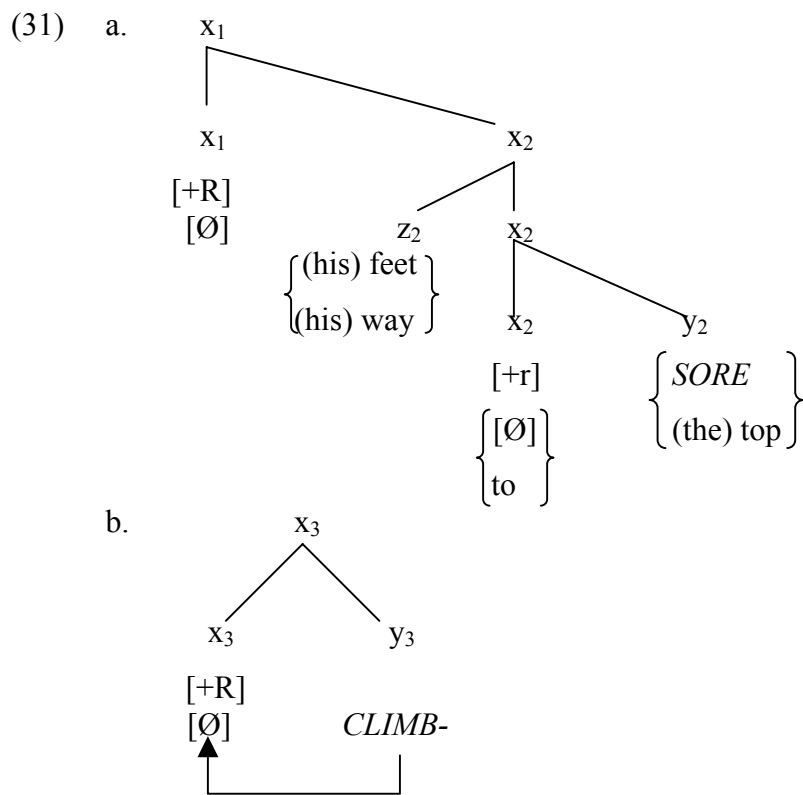
same reason when explaining the ungrammaticality of the Catalan examples in (30a'-30c').

- (30) a. The inexperienced adventurer climbed his feet sore.
 a'. *L'aventurer inexperienced escalà els seus peus adolorits
 the adventurer inexperienced climbed the his feet sore
 b. The inexperienced adventurer climbed his way to the top.
 b'. *L'aventurer inexperienced escalà el seu camí al cim.
 the adventurer inexperienced climbed the his way loc.prep.-the top
 c. The inexperienced adventurer climbed to the top.
 c'. *L'aventurer escalà al cim. (cf. (26b'))
 the adventurer climbed loc.prep-the top

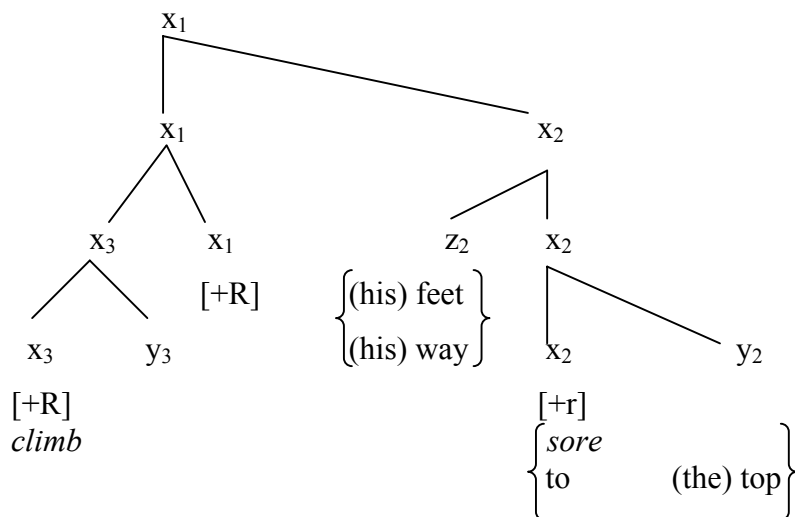
If the present parallelism between directional PPs and APs is to be maintained, the prediction is that complex resultative constructions involving conflation of two different argument structures are present in English, but absent from Romance. If my analysis is on the right track, the ungrammaticality of the Catalan example (30a') is to be explained as follows: it is the case that the directional/Path element corresponding to an abstract terminal coincidence relation (cf. my [+r]) is lexically conflated into the verb in Romance. In other words, its verb-framed nature involves obligatory conflation of this birelational directional element into the eventive relation. As a result, the conflation of this saturated eventive head with lexical material from another independent argument structure turns out to be excluded (cf. section 3.1.3 for more details).

In contrast, the satellite-framed nature of English allows the entire abstract Path constituent involved in resultatives (e.g., *sore* in (30a)) to be left stranded. As a result, the phonologically null matrix of the transitive eventive head in (31a) must be saturated by a phonologically full matrix from an independent eventive head, e.g., that corresponding to the unergative one in (31b). Due to the satellite nature of the abstract terminal coincidence relation in (31a), the phonologically null matrix of the eventive head in (31a) must be saturated externally: it is saturated by the phonological content provided by the eventive head in (31b). The conflation of the

subordinate unergative head in (31b) into the main transitive head in (31a) is depicted in (32):³²²



(32) The adventurer climbed {his feet sore/his way to the top}



³²² Recall that the external argument (i.e., *the adventurer*) is to be introduced by the relevant functional projection (cf. Bowers (1993, 2002), Chomsky (1995), or Kratzer (1996), among others).

After this brief *excursus* on complex resultative(-like) constructions, let us deal with our pending case, i.e., the transitive variant exemplified in (33):

(33) The adventurer climbed the mountain.

An adequate analysis for the transitive variant in (33) has proved to be hard to pin down partly since the following syntactic-conceptual correspondences are not prototypical (cf. Hopper & Thompson (1980) or Croft (1991), among others): the subject is associated to a Theme, while the direct object is expressing a 'completive' Path: cf. Jackendoff's analysis in (2)/(3a).

Indeed, the sentence in (33) can be said to be not problematic for those theories that assume a non-uniform/non-homomorphic relation at the syntax-semantics interface. However, despite their descriptive merits, I have argued that they lack explanatory power (cf. Bouchard (1995) and my section 1.5 above).

On the other hand, with the introduction of the theoretical hypothesis in (22), repeated in (34), into the generative framework, the possible choices become more limited since the semantic analysis is now crucially constrained by the syntax.

(34) Meaning is a function of both (non-syntactically transparent) *conceptual content* and (syntactically transparent) *semantic construal*.

Mateu (2000a) argued that the transitive variant in (33) is to be analyzed as a causative change of state verb.³²³ However, Andrew McIntyre (p.c.) pointed out to me that there appears to be some empirical evidence against such an analysis. For example, while uncontroversial causative verbs conform to the tests for patienthood, the verb *climb* does not: cf. (35a,b). Moreover, causative verbs enter into the middle construction, while the verb *climb* cannot: cf. (35c,d).³²⁴

³²³ Cf. Moreno (1997, 2001) for a similar view, which is in turn inspired by Pustejovsky's (1991) event structure analysis. According to this event structure-based analysis, there is a transition involved in (33a): the mountain goes from the state of not being climbed to that of being climbed.

³²⁴ One caveat is in order here: the contrast in (35c,d) does not hold in Romance since a sentence like (35d) appears to be quite acceptable as well: cf. Cat. (?) *Aquestes muntanyes s'escalen fàcilment* ('These mountains SE climb easily'). However, it is the case that in Romance, the 'pronominal passive construction', which is not found in English, is mixed with the middle construction (see Bartra (2002b) for relevant discussion). Whis this caveat in mind, the Romance reader should not be surprised if examples like *These polkas dance easily* are bad in English (McNally (p.c.)), but quite acceptable in his/her language: e.g., cf. Cat. (?) *Aquestes polques es ballen fàcilment* 'These polkas SE

- (35) a. What he did to the window was break it/open it/ clear it.
 b. *What he did to the mountain was climb it.
 c. These windows break/open/clear easily.
 d. ??These mountains climb easily.

Andrew McIntyre (p.c.)

One could then argue that the unaccusative analysis in (36b) appears to be more adequate for the surface transitive sentence in (36a): *the mountain* becomes the direct object of the verb in virtue of the conflation of an abstract directional preposition into the motion verb. In fact, such an analysis appears to hold for languages like German, where the P in (36b) has been argued to be morphologically realized as the prefix *be-*.³²⁵

- (36) a. The adventurer climbed the mountain.
 b. [V [the adventurer [P the mountain]]]
 ↑

However, as noted in section 3.3.3 above, I tend to be more sympathetic to Hoekstra's (1992) and Mulder's (1992) syntactic analysis of *be*-verbs: the prefix *be-* is a SC predicate: cf. (24a). Be this as it may, here I will limit myself to pointing out that one's mere applying the analysis in (36b) to (36a) does not account for the *manner* component associated to the verb *climb* in (36a). Indeed, there is a semantic difference between purely directional verbs like the Catalan verb *pujar* 'go up' in (26b), which can be roughly analyzed as in (36b), and the verb *climb* in (36a), which cannot be analyzed like a mere directional unaccusative verb.

The derived direct object analysis discarded, the present restrictive theory of argument structure only allows two analyses for the direct object in (36a): (i) it is an 'affected Figure' (cf. Mateu (2000a)), or (ii) it is an 'Incremental Theme'.

It is then the case that factors like the relevant contrasts in (35) above and the absence of relevant morphosyntactic evidence for analyzing the verb *climb* as a

dance easily' (cf. Hale & Keyser (1993) for the structural reasons preventing a creation verb like *dance* to enter into the middle construction). For some relevant analyses of the middle, see Ackema & Schoorlemmer (1995), Condoravdi (1989), Fagan (1992), Hale & Keyser (1987, 1993), Hoekstra & Roberts (1993), Khalaily (1997), Kemmer (1993), Rapoport (1999b), Steinbach (2002), and Stroik (1992, 1995), among others.

³²⁵ Cf. Wunderlich (1987) and Brinkmann (1997).

causative verb of change of state, appear to force me to claim that the analysis in (i) is also to be discarded, the one in (ii) being more appropriate.

Recall that following Harley (2001, 2002), I have argued that 'Incremental Theme' is not but the descriptive label that corresponds to the internal theta-role to be drawn from unergative structures like the one depicted in (37).³²⁶ As noted above, the eventive head X_{I+R} in (37) amounts to the lexical semantic primitive *DO*. Indeed, its non-relational complement Y_I is appropriately called an 'Incremental Theme': e.g., in the most typical context (i.e., the telic one), the ending of the event can be said to coincide with the full consumption/traversing of the non-relational element.³²⁷ Notice then that the 'Incremental Theme' defined as above appears to be an appropriate term for the direct object in (36a): the ending of *climbing* typically coincides with the end, i.e., the top of the mountain (cf. *The adventurer climbed the mountain in six hours*).

(37) $[_F Z_I [_F F [_{X_I} X_{I+R}] Y_I]]]$

On the other hand, it should be clear that the verb *climb* is not a quirk of the English lexicon. More examples of so-called 'route verbs' (cf. Tenny (1994: 17; 1995a,b)) are given in (38).

- (38) a. The adventurer swam the channel.
 b. The adventurer surfed the wave.
 c. The adventurer walked the trail.
 d. The adventurer canoed the stream.

As expected, these verbs do not pass the relevant 'affectedness tests' in (39) either. Quite probably, the failure of *climb*-verbs to pass these tests must be related to Tenny's (1994: 17) observation that "they do not undergo change or motion during the event".³²⁸

³²⁶ See Tenny (1994) for a different use of the 'Incremental Theme' role.

³²⁷ See Krifka (1992) or Tenny (1994), among others, for relevant discussion on typical examples like that of *eating a sausage*.

³²⁸ See Rapoport (1993) for the claim that only *CHANGE* verbs enter into the middle construction. (but cf. Erteschick-Shir & Rapoport (1997) for the analysis of some apparent

- (39) a. *What the adventurer did to the channel was to swim it.
 b. ??These deep channels swim easily.
 c. *What the adventurer did to the wave was to surf it.
 d. ??These big waves surf easily.
 e. *What the adventurer did to the trail was to walk it.
 f. ??These short trails walk easily.
 g. *What the adventurer did to the stream was to canoe it.
 h. ??These deep streams canoe easily.

Let us then deal with the formation of the complex argument structure involved in the sentences in (36a) and (38). Since those roots encoding (encyclopedic-like) conceptual content can only be associated to non-relational elements in the present restrictive framework (cf. section 5.2 above; cf. also 1.4 for arguments for this theoretical claim), (40a) and (40a') cannot be the argument structures corresponding to (36a) and (38a), respectively.



- (40) a. ([_F The adventurer [_F F] [_{X1} *CLIMB*_[+R] (the) mountain]])
 a'. ([_F The adventurer [_F F] [_{X1} *SWIM*_[+R] (the) channel]])

Rather it is my claim that the formation of the complex argument structure corresponding to (36a) and (38) involves two simple unergative argument structures, the main one being depicted in (41a,41a'), and the subordinate one in (41b,41b'). Two derivational steps are worth being commented on here: Firstly, the phonological properties associated to the non-relational element of the subordinate argument structure (i.e., {*CLIMB/SWIM*}) are copied into the null phonological matrix of the subordinate eventive head X_2 . Secondly, the subordinate eventive head X_2 in

counterexamples to this generalization). See also Demonte (1991: chap 1) for relevant discussion.

See Hale & Keyser (1993: 82-83) for the *structural* definition of the so-called 'affected argument': "Transitive verbs that can undergo middle formation are just those whose s-syntactic object is an 'affected argument', that is, those whose s-syntactic object corresponds to an internal subject in L<exical>R<elational>S<tructures>." Although such a restriction is to be taken as a necessary (rather than sufficient) condition on middle formation, notice that this is *only* compatible with the new analysis I want to entertain here: the direct object in (36a) and (38) does not occupy an internal specifier position (i.e., it is not an 'affected Figure'), but the complement one in (37) (i.e., it is an 'Incremental Theme'). Accordingly, the ungrammaticality of (35d; 39b,d,f,h) is expected.

(41b/41b') is merged into the main eventive head X_1 .³²⁹ Given this, the latter head acquires phonological content via the conflation process represented in (42).

- (41) a. ([_F The adventurer [_F F] [_{X₁} X₁[+R][∅] (the)mountain]]) b. [_{X₂} X₂[+R][∅] CLIMB]

 a'. ([_F The adventurer [_F F] [_{X₁} X₁[+R][∅] (the)channel]]) b'. [_{X₂} X₂[+R][∅] SWIM]

 (42) ([_F The adventurer [_F F] [_{X₁} {climb/swim} {(the)mountain/(the)channel}]]])

5.4. Epilogue

Indeed, it seems quite appropriate to conclude this chapter by providing a relational syntactic and semantic analysis of the following progressive construction in (43) (cf. section 2.3 above).

- (43) I am climbing to the end.

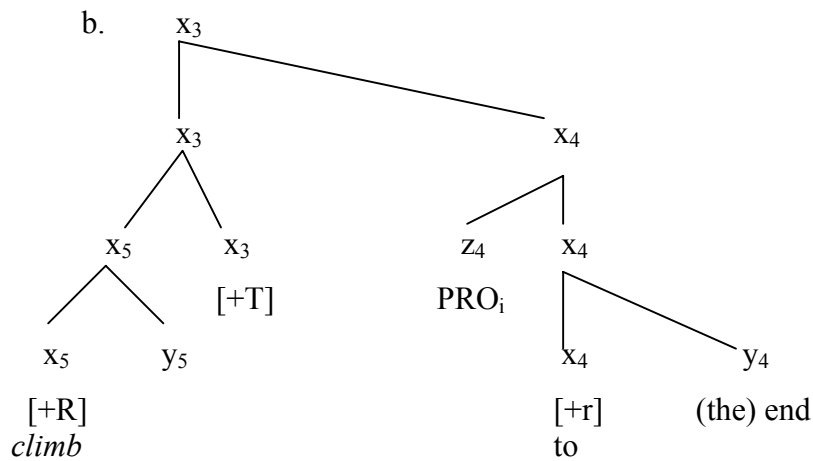
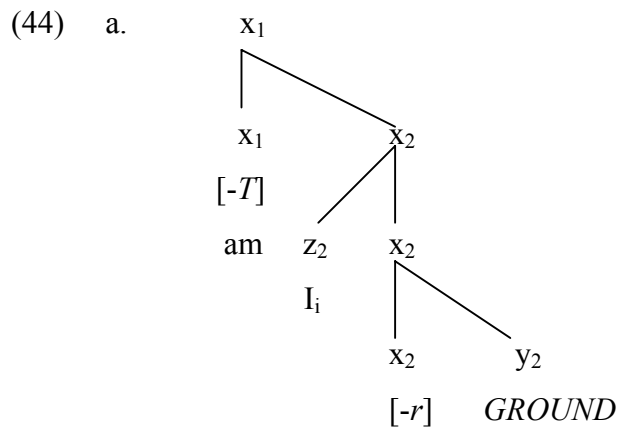
Generally speaking, the progressive construction can be regarded as a typical case of what Mateu & Amadas (1999b) refer to as 'Extended Argument Structure': this construction has been argued to involve the extension of a lexical argument structure by means of superimposing an unaccusative structure that expresses the situation of a Figure in the middle of the lexical event, the latter being in turn construed as a Ground via a nominalization process. Indeed, such a condensed statement can be said to be hard to understand. So let us deal with it step by step.

To start with, the following rough 'localistic' note can be useful: instead of locating an individual (i.e., *I*) in a physical place (e.g., *I am in the kitchen*), in (43) this individual is located in the middle of the complex event of *going to the end climbing*.

To put it in more technical terms, the progressive construction in (43) can be argued to involve the unaccusative argument structure depicted in (44a) *plus* a complex argument structure similar to the one depicted in (29) above. Two

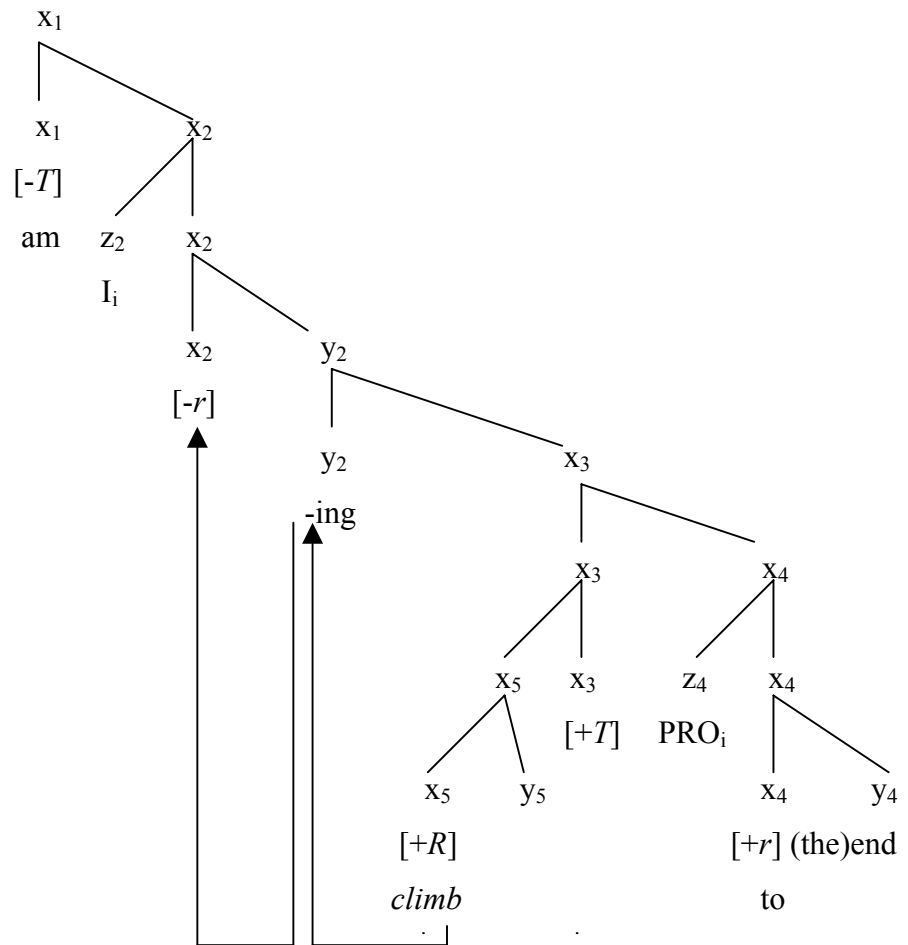
³²⁹ Recall that 'Conflation' is to be seen as concomitant of 'Merge' (cf. Hale & Keyser (1998, 1999a, 2000a).

mnemonic structural paraphrases for (44a) and (44b) are ‘*BE [I centrally located in some unspecified Ground]*’ and ‘*[GO_[DO-CLIMB] [I to the end]]*’, respectively.



Those two independently generated argument structures in (44) can be argued to be integrated by means of a nominalization process: cf. (45). As a result of this process, the unspecified Ground in which the Figure *I* is ‘centrally located’ turns out to be the nominalized unaccusative argument structure in (44b). Accordingly, a mnemonic structural paraphrase for the complex argument structure in (43) is ‘*be [I centrally located in [event [go_[DO-CLIMB] [I [to end]]]]*’, the emphasized part corresponding to the nominalized event: i.e., ‘*I am centrally located in the event of going to the end climbing* (Tense Phrase_[present] added).

(45)



As emphasized in section 2.3 above, the relational syntactic and semantic analysis in (45) heavily depends on Bolinger's (1971) *empirical* arguments for the analysis of the *-ing* form as involving both a prepositional-like element (cf. my x_2) and a nominal-like element (cf. my y_2), in spite of their lacking a surface realization (cf. section 2.3.1).

Finally, I will conclude this section with some relevant remarks concerning the so-called 'Imperfective Paradox', (cf. Dowty (1979), among others): The puzzle can be exemplified with the observation that for verb phrases expressing an activity like *climb* in its unergative use, the inference from the past progressive to the simple past is valid, while for so-called 'accomplishments' like *climb to the end*, such an inference does not necessarily hold.

(46) *The Imperfective Paradox*: (a) entails (b), but (c) does not entail (d)

- a. I was climbing.
- b. I climbed.

- c. I was climbing to the end.
- d. I climbed to the end.

As argued by Mateu & Amadas (1999b), there is a *structural* reason involved in the apparent puzzle in latter minimal pair. (46c) does not entail (47d) since there is a central coincidence relation that dominates the lexically³³⁰ telic event of *climbing to the end*: cf. 'I was centrally located in the event of climbing to the end'. As a result, there is an *uncompleted* event involved in (46c), which sharply contrasts with the *completed* event involved in a sentence like (46d), which is to be analyzed as a TP_[past] dominating the lexically telic argument structure corresponding to *climb to the end*.³³¹

By contrast, the lexical atelicity of both argument structures in (46a) and (46b) (cf. the *stative* situation corresponding to the unaccusative structure and the *dynamic* one corresponding to the activity of *climbing*) explains why the relevant entailment holds at *any* interval. :-)

Well, since it is clear that there is no way for me "to reach the end", what about leaving matters here and taking a *rest*?³³²

HAMLET: (...) *The rest...is silence.*
[dies]

HORATIO: *Now cracks a noble heart. Good night, sweet Prince,*
and flights of angels sing thee to thy rest.

Hamlet Prince Of Denmark, Act 5 Scene 2

³³⁰ It is important to emphasize the *lexical* aspect of telicity (i.e., that relevant to those lexical argument structures discussed presently), since it is well-known that 'telicity' is not only sensitive to lexical factors, but to other factors as well (e.g., the quantificational properties of the direct object). For relevant discussion on the compositional nature of aspect, see Verkuyl (1972, 1993), Tenny (1994), Jackendoff (1996), Marín (2000), or Sanz (2000), among others.

³³¹ See Zucchi (1999), among others, for relevant discussion on 'incomplete events' and the progressive.

³³² I am very grateful to Zulema Borràs for providing me with the most beautiful resultative construction one could ever dream of.

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