Syntactic Tools for Semantic Construal*

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1. Introduction

There is considerable disagreement in the linguistic literature concerning how syntactically transparent semantic composition is. Clearly, such an issue depends on the very status of the semantic theory and its relation with the syntactic theory. As pointed out by Uriagereka (1998b:5), two extreme positions and some intermediate ones can be distinguished:

(1) "In one extreme, there would be no such semantic theory, for there would be no semantic facts in a proper sense; all there exists is structure (syntax as broadly as you care to characterize it), which speakers somehow (i.e., mysteriously) use for the usual intentional purposes; if I am not mistaken, this is essentially Chomsky's minority view. In another extreme, there would have to be a semantic theory corresponding to bona-fide semantic facts, and then some more or less articulated correspondence rules would be in charge of relating syntax and semantics; this is, I suppose, the majority view that montogovians, Jackendovians, and others advocate, with differences emerging in terms of how both the final representations and the correspondence rules function. And then, naturally, there are intermediate positions. Perhaps the most interesting one asserts that there may be semantics, but only in the intentional involvement in the process, so that semantics per se is trivially and transparently associated to syntax".

Uriagereka (1998b: 5)

In the present paper we will put forward some theoretical arguments in favor of the claim that semantics is transparently associated to syntax. As is well-known, Jackendoff (1990, 1993, 1997) has often devoted himself to presenting arguments against such a position. However, we will argue that his criticisms of the syntactically-based approach to semantic composition are not well-grounded, this being due to his neglecting the difference between (non-syntactically transparent) *conceptual content* and (syntactically transparent) *semantic construal*. Accordingly, in this paper we will take pains to show the necessity of drawing the distinction in (2):[1]

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

On the basis of this distinction, we will argue that the grammatically relevant predicate-argument structure representations are not to be drawn from non-syntactically based

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[1] Other explicit approaches to the crucial distinction in (2) are Bouchard (1995) or Mateu (1999). Outside the generative paradigm, this distinction (even though expressed under very different assumptions) is also to be found in Langacker's (1987, 1991) theory of Cognitive Grammar. Here we will review some of Mateu's (1999) arguments for (2) from a new perspective.

conceptual structures encoding 'conceptual content', but rather from syntactic structures encoding 'semantic construal'.

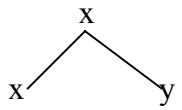
The basic organization of the present paper is as follows: In the first part (sections 2-4), drawing heavily on Hale & Keyser's (1993, 1998, 1999a) configurational theory of argument structure, we will present those syntactic tools that turn out to be crucial when dealing with the syntactic aspect of the meaning inherent to argument structure representations, i.e., that concerning the 'semantic construal'. In the second part (section 5), we will show the convenience of adopting a syntactically based approach to semantic composition. Such an approach will be shown to be more in tune with Chomsky's (1995f.) optimal conception of the syntax-semantics interface, rather than with the one argued for in Jackendoff (1990, 1997).

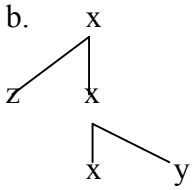
2. The syntax of argument structure

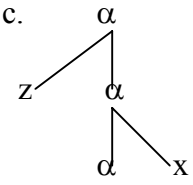
In this section, we sketch out briefly Hale & Keyser's theory of L(exical)-Syntax, which our theory of the homomorphism between the syntax and semantics of argument structure (cf. section 4) will be seen to depend on in many respects.

According to Hale & Keyser (1999a:454), "argument structure is defined in reference to two possible relations between a head and its arguments, namely, the head-complement relation and the head-specifier relation." A given lexical head may enter into the structural combinations in (3): "These are its argument structure properties, and its syntactic behavior is determined by these properties" (Hale & Keyser (1999a: 455)).[2]

(3) Head (*x*); complement (*y* of *x*), predicate (*x* of *z*)

a. 

b. 

c. 

d. x

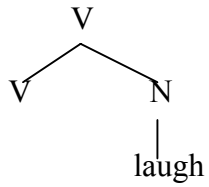
The main empirical domain on which Hale & Keyser's hypotheses have been tested includes denominal verbs (unergative verbs like *laugh* (cf. (4a)), transitive locative verbs like *shelve* (cf. (4b)), or locatum verbs like *saddle* (cf. (4c))) and deadjectival verbs (e.g., *clear* (cf. (4d)).

(4) 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, this resulting in (5a); both locative verbs (e.g., *shelve*) and locatum verbs (e.g., *saddle*) involve merging the structural combination in (3b) into that of (3a): see (5b). Finally, transitive deadjectival verbs also involve two structural combinations, i.e., that in (3c) is merged into that of (3a): see (5c).

[2] According to Hale & Keyser, the prototypical or unmarked morphosyntactic realizations in English of the lexical heads in (3) (i.e., the *x*'s) are the following: *V* in (3a), *P* in (3b), *Adj* in (3c), and *N* in (3d).

(5) a.



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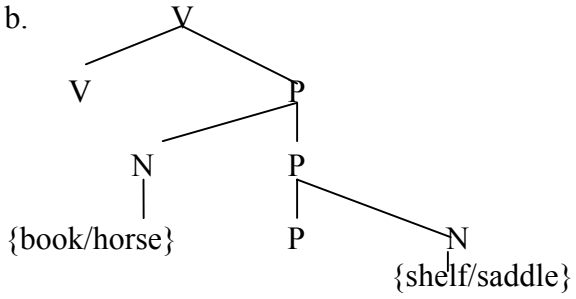

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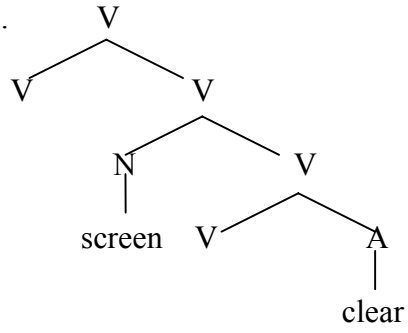

Locative and locatum verbs are said to be transitive (cf. (6a)) because their inner P-projection cannot occur as an autonomous predicate. By contrast, deadjectival verbs can be intransitive ((cf. (6b)), since their inner V-projection can occur as an autonomous predicate. Crucially, notice that it can be associated with tense morphology.

(6) a. *The book shelved. // *The horse saddled.
b. The screen cleared.

Furthermore, as argued in Hale & Keyser (1993f.), the external argument of transitive constructions (unergatives included) is represented as truly external to the argument structure configuration. The external argument will appear as the specifier of a functional projection in s(ential)-syntax (cf. also Kratzer (1996), among others).

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. If Conflation can be argued to be concomitant of Merge (Hale & Keyser (1999a)), the argument structures in (5) turn out to be quite abstract since they have been depicted as abstracted away from those conflation processes involved in the examples in (4). Applying the conflation operation to (5a) involves copying the full phonological matrix of the noun *laugh* into the empty one corresponding to the verb. Applying it to (5b) involves two steps: the full phonological matrix of the noun {*shelf*/*saddle*}is first copied into the empty one corresponding to the preposition; since the phonological matrix corresponding to the verb is also empty, the conflation applies again from the saturated phonological matrix of the preposition to the unsaturated matrix of the verb. Finally, applying the conflation process to (5c) 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 (7), both aspects of their theory of argument structure relations, the syntactic and the lexical, are considered in no way incompatible by Hale & Keyser.

(7) 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&LA>. 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&LA>". Hale & Keyser (1999a: 453)

Notice that adopting the conservative position quoted in (7a) 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 (5) 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 (8) is to be regarded as the actual *lexical* representation of the denominal verb *saddle* that determines the *syntactic* argument structure in (5b). 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).[3]

(8)
$$\begin{bmatrix} -N \\ +V \\ F\text{-}P \\ \dots \end{bmatrix} \begin{bmatrix} -N \\ -V \\ v\text{-}F \\ F\text{-}N \\ \dots \end{bmatrix} \begin{bmatrix} +N \\ -V \\ P\text{-}F \\ \dots \end{bmatrix}$$

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

[3] The abbreviations in (8) 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")

Since our present concern (i.e., to provide syntactic tools for semantic construal) does not crucially hinge on our assuming Uriagereka's refinements on the proper lexical encoding of instructions similar to those in (8) to derive syntactic argument structures like that in (5b), we will omit such a discussion here. As far as we can see, the discussion to be presented below can be regarded as compatible with both Hale & Keyser's and Uriagereka's ways of constructing syntactic argument structures.

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

In this section, we put forward the hypothesis that the lexical head *x* in (3c) 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 (3c), whose unmarked morphosyntactic realization in English is the category Adjective (*Adj*), can be argued to be decomposed into two more primitive lexical-syntactic elements:[4] we claim that *A* involves the conflation of a non-relational element like that expressed by the lexical head *y* in (3b) into a relational element like that expressed by the lexical head *x* in (3b). That is to say, the structural combination in (3b) allows us to account for the argument structure properties of *Adj*s as well. Accordingly, the argument structure involved in two sentences like those in (9a-b) turns out to be the same, that in (9c). Quite crucially, we claim that the conflation of *y* into *x* involved in *Adj* accounts for both its relational or predicative character, which *Adj* shares with *P*, and its nominal properties, which *Adj* shares with *N*.[5]

(9) a. is *[the cat [in the room]]*
b. is *[the cat [happy]]*
c. is *[$_x$ z [$_x$ x y]]*

Furthermore, the decomposition of adjectives into a relational element plus a non-relational element can be regarded as quite natural from a conceptual perspective as well. For example, from a Jackendovian perspective, the Conceptual Structure assigned to (10a) can be argued to contain a relational element introducing an abstract Place (cf. *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.[6]

(10) 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: e.g., not only do Romance languages lack prepositional resultative-like constructions like the one in (11a), but adjectival ones like that in (11b) are missing in these languages as well:[7]

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

[5] For example, the fact that languages like Latin mark *Adj*s with morphological case can be taken as empirical evidence in favor of their nominal nature.

[6] See Jackendoff (1990: 250) for a localistic analysis of the Lexical Conceptual Structure corresponding to the verb *open*.

[7] (11a') and (11b') are grammatical in the following irrelevant readings: (11a') is grammatical if the the PP has a

(11) a. Joe kicked the dog into the bathroom.

a'. *El Joe colpejà el gos a dins el bany. (Catalan)
The Joe kick-past-3rd.sing the dog inside the bathroom

b. Joe kicked the door open.

b'. *El Joe colpejà la porta oberta.
The Joe kick-past-3rd.sing the door open

The argument structure properties shared by PPs and APs can be argued to be empirically motivated on the basis of a crosslinguistic analysis of resultatives: the lexical syntactic element corresponding to the directional relation involved in both prepositional and adjectival resultatives can be argued to be the same, this being explicit in the former, but covert in the latter.[8] If we are willing to maintain that the relevant explanation accounting for the data in (11) is basically morphosyntactic rather than purely semantic, it will be seen inevitable to decompose adjectival resultative predicates in two different lexical syntactic elements: the parameter must have access to the relational element incorporated in *Adj*s, i.e., that corresponding to the directional relation. That is to say, to the extent that both prepositional and adjectival resultatives are treated in a uniform way as far as the lexical parameter is concerned, the decomposition of adjectival resultative predicates into two lexical syntactic elements seems to be justified.[9]

Quite probably, Hale & Keyser would not accept our present modification or reduction of their argument structure types in (3), since the causative/inchoative alternation is presented by them as an important test that allows them to maintain the structural distinction between those denominal verbs involving Merge of (3b) into (3a) and those deadjectival verbs involving Merge of (3c) into (3a). According to them, such a structural distinction explains why the former are always transitive, while the latter can have an intransitive variant (the α verbal head in (3c) being then inflected with Tense).

However, as shown by Kiparsky (1997) and Mateu (2001a), such a generalization is not well-grounded. For example, it can be concluded from (12) that denominal verbs *can* participate in the causative/inchoative alternation if they denote events that can proceed without an explicit animate agent.

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

Kiparsky (1997: 497)

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locative, non-directional reading: i.e., 'the kicking took place inside the bathroom'; (11b') is grammatical if the Adj is interpreted not as resultative but as attributive: i.e., 'the open door'.

[8] See Jackendoff (1990) for the insight that complex AP resultative constructions like the one in (11b) involve an abstract Path relation.

[9] See Mateu (2000b, 2001b) and Mateu & Rigau (1999, in press) for more discussion.

Moreover, it is interesting to notice that in Romance locative denominal verbs can also be found in unaccusative structures, contrary to Hale & Keyser's predictions again.[10]

(13) a. L'helicòpter aterrà tard. (Catalan)
the helicopter to-land-ed 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/inchoative alternation: e.g., cf. *legalize, visualize*, etc.

Similarly, Levin and Rappaport Hovav's (1995: 104-105) examples in (14-15) also show that the licensing of the verb in the causative/inchoative 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.".

(14) a. The dressmarker lengthened the skirt.
b. *The skirt lenghtened.
c. The mad scientist lengthened the days.
d. The days lenghtened.

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

Levin and Rappaport Hovav (1995: 104-105)

Accordingly, the relevant conclusion for our present purposes seems to be the following: unlike Hale & Keyser, we want to argue that the causative/inchoative alternation cannot be taken as a valid structural criterion/test when working out the relevant lexical syntactic structures. For example, the fact that denominal verbs like *shelve* or *saddle* do not enter into the causative/inchoative 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 animate agent. On the other hand, it is clear that the oddity of examples like those in (14b-15b) when compared to those in (14d-15d), 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 in (12).

This said, the main objection that Hale & Keyser could entertain with respect to our eliminating the apparently basic combination of (3c) vanishes.

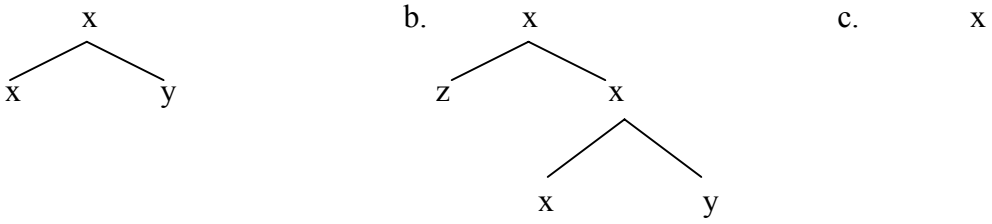
Before concluding this section, one important caveat is in order: our recognizing that the facts partly go with the semantics with respect to the causative/inchoative alternation should not be seen as incompatible with our adopting a syntactic approach to argument structure. Rather, the relevant conclusion should be the following: those who are willing to adopt a configurational approach to argument structure should avoid elaborating on hypotheses/tests to explain facts that actually fall out of their program.

[10] See Mateu (2001a) for more discussion.

4. The semantic construal of argument structure relations

The abovementioned modification/reduction of Hale & Keyser's argument structure types is not only empirically supported, as we have pointed out in section 3, but is welcome from a theoretical perspective as well. Our goal in 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.[11] In fact, our present proposal partakes of both Hale & Keyser's (1993) paper, where certain meanings were associated with certain structures, and their more recent (1998-1999a) papers, where a refinement of the basic argument structure types is presented. Quite importantly, we want to argue that the reduction/modification argued for in section 3 allows us to synthesize these two compatible proposals in quite an elegant and simple way. Given this reduction, the basic, irreducible argument structure types turn out to be those in (16).

(16) a. b. c.



We claim that the reduction of (3) to (16) allows an homomorphism to show up in the terms expressed in (17): given (17), the relational syntax of argument structure can be argued to be directly associated to its corresponding relational semantics in quite a uniform way:

(17) a. The lexical head *x* in the syntactic configuration of (16a) is to be associated to an *eventive relation*.
b. The lexical head *x* in the syntactic configuration of (16b) is to be associated to a *non-eventive relation*.
c. The lexical head *x* in (16c) is to be associated to a *non-relational element*.

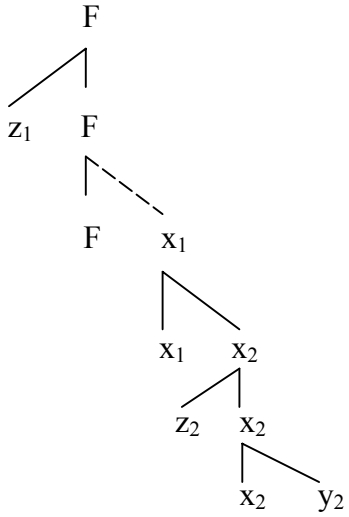
In turn, the eventive relation which is uniformly associated with the *x* in (16a) can be instantiated as two different semantic relations:[12] If there is an external argument in the specifier position of the relevant *F*(unctional) projection (cf. Hale & Keyser (1993f.) or Kratzer (1996), among others), the eventive relation will be instantiated as a *source relation*, the external argument being interpreted as 'Originator' (cf. Borer (1994) and Mateu (1999)). If there is no external argument, the eventive relation will be instantiated as a *transitional relation* (cf. Mateu (1999)), which in turn always selects a non-eventive relation (cf. (16b)), 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 both transitive structures (cf. x_1 in (18)) and unergative structures (cf. x_1 in (19)), while the transitional relation is involved in unaccusative structures (cf. x_1 in (20)). Notice that the only structural difference between transitive structures and unergative structures is based on the type of complement selected by the source relation: While a non-eventive relation is selected in (18) as complement, it is a non-relational element that is selected in (19). As a result, the transitive structure in (18) can be argued to partake of both an unergative structure (the eventive relation x_1 is interpreted as a source

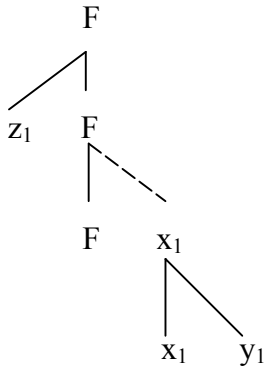
[11] See Bouchard (1995), Baker (1997), or Mateu (1999) for relevant discussion on the homomorphic nature between the syntactic and semantic structures.
[12] In this sense our proposal is similar to that developed by Harley (1995). The main difference is that, with Hale & Keyser (1993f.), we do not analyze the syntactic head associated to the eventive relation as a functional one.

relation to be associated with an external argument z_1 via *F*) and an unaccusative structure ((18) includes a non-eventive relation x_2).

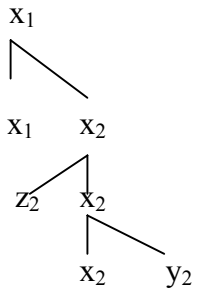
(18) *Transitive structure*



(19) *Unergative structure*



(20) *Unaccusative structure*



Quite importantly, it is necessary to draw a crucial distinction between those relational elements encoding grammatically relevant aspects of semantic construal and those non-relational elements encoding grammatically irrelevant aspects of pure conceptual content/encyclopedic knowledge.

Let us deal with the semantic construal of relational elements. Two different kinds of semantic construal must be distinguished: (i) the *configurational* semantics that can be read off the mere lexical syntactic structure and (ii) the *lexical* semantics that is expressed via

binary semantic features associated to the particular relational heads.

Given this distinction, we want to argue that the syntactic objects in (18), (19), and (20) are to be associated to their corresponding structural meanings, independently of the particular lexical items that instantiate them (see Hale & Keyser (1993) for a particular implementation of such a view). Structural semantic properties like eventive ({source/transitional}), non-eventive, and non-relational can then be argued to be directly read off the mere syntactic configurations. For example, the x_1 relation is to be read as a source relation in (18) and (19), but as a transitional relation in (20). The x_2 relation is to be read as a non-eventive relation in both (18) and (20).

On the other hand, it is clear that there must be a compatibility between those two different aspects of semantic construal (i.e., (i) the structural semantic properties that can be read off the mere syntactic structure, and (ii) the lexical semantic properties of the relational head). Let us establish such a compatibility by assuming that the lexical semantic properties are assigned to the relational heads in a binary way like that exemplified in (21):[13]

(21)

CAUSE:	positive/dynamic semantic value associated to the source relation
HAVE:	negative/static semantic value associated to the source relation
GO:	positive/dynamic semantic value associated to the transitional relation
BE:	negative/static semantic value associated to the transitional relation
TCR:	positive/dynamic semantic value associated to the non-eventive relation
CCR:	negative/static semantic value associated to the non-eventive relation

As lexical notions of semantic construal, the positive/negative (or alternatively, dynamic/static) semantic value associated to the relational heads can be argued to be grammatically relevant.[14] This notwithstanding, notice that this lexical distinction is not relevant to the syntactic projection of arguments. Consider the minimal pairs (22a-b) and (22c-d), and their corresponding argument structures in (23).

(22)
a. John sent Peter to prison.
b. John kept Peter in prison.
c. Peter went to prison.
d. Peter was in prison.

(23)

a.	[$_F$ John	[$_{X1}$ CAUSE	[$_{X2}$ Peter	[$_{X2}$ TO prison]]]]
b.	[$_F$ John	[$_{X1}$ HAVE	[$_{X2}$ Peter	[$_{X2}$ IN prison]]]]
c.		[$_{X1}$ GO	[$_{X2}$ Peter	[$_{X2}$ TO prison]]]
d.		[$_{X1}$ BE	[$_{X2}$ Peter	[$_{X2}$ IN prison]]]

Despite the different semantic values associated to the source relation (the positive/dynamic one in (23a), and the negative/static one in (23b)), and despite the different ones associated to the non-eventive/spatial relation (the positive/dynamic one in (23a)), and the negative/static one in (23b)), it is nevertheless clear that both (22a) and (22b) are indistinguishable as far as their syntactic projection of arguments is concerned. We want to argue that this is due to the fact that both (22a) and (22b) project the very same argument

[13] TCR= T<erminal> C<oincidence> R<elation>; CCR = C<entral> C<oincidence> R<elation>. See Hale (1985) for relevant discussion on these grammatically relevant semantic relations.

[14] For example, see Tenny (1994: 190-192), where it is explicitly argued that the information associated to the CAUSE function or the GO function is essentially aspectual, *ergo* grammatically relevant. See also Mateu (2001a) for some grammatically relevant correlations that can be established between (lexical) telicity and TCR, and between (lexical) atelicity and CCR.

structure, that in (18). Accordingly, in both (23a) and (23b), *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 (22c)-(22d): Despite the different semantic values associated to the transitional relation (the positive/dynamic one in (23c), and the negative/static one in (23d)), and despite the different ones associated to the non-eventive relation (the positive/dynamic one in (23c)), and the negative/static one in (23d)), it is nevertheless clear that both (23c) and (23d) are indistinguishable as far as their syntactic projection of arguments is concerned. We want to argue that this is due to the fact that both project the very same argument structure, the unaccusative structure in (20): Accordingly, in both (23c) and (23d), *Peter* is interpreted as 'Figure', and *prison* as 'Ground'.

As is stands, notice that our claim that the semantic values in (21) are not directly relevant to the syntactic projection of argument structure should allow syntax to generate structures like that in (24b).

(24) a. Peter stayed with him.
b. *John stayed Peter with him.

Following Chomsky (2001: 9),[15] we assume that theta-theoretic failures at the interface yield 'deviant structures'. Given our set of present assumptions, (25b) is to be ruled out because of the failure induced by the incompatibility between the presence of an external argument and the semantic value lexically associated to the eventive head of *stay* (i.e., *BE*). That is to say, the failure in (25b) is not to be regarded as related to the syntactic configuration because nothing prevents (25b) from being attributed the configurational interpretation corresponding to the transitive structure in (18). That is, its mere syntactic configuration is interpretable: *John* in (25b) would in principle be allowed to be interpreted as Originator. However, it is the case that 'verbs of existence/appearance', etc. do not appear to select an external causer,[16] hence the deviance of (25b).

(25) a. [BE [$_{X2}$ Peter [$_{X2}$ WITH him]]]
b. *[$_{F}$ John [$_{X1}$ BE [$_{X2}$ Peter [$_{X2}$ WITH him]]]]

On the other hand, we would like to emphasize that one important tenet of our theory of argument structure is that there is no configurationally based lexical decomposition beyond L(exical)-Syntax (cf. Mateu (2000a)). Accordingly, we want to argue that the lexical decomposition of verbal predicates like those in (26) stops at the coarse-grained level of L-Syntax, the root being always associated to a non-relational element encoding pure conceptual content (cf. (27)).[17] Concerning the examples in (26), notice that the root can be said to be

[15] "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 (2001: 9)

[16] See Levin & Rappaport Hovav (1995). The fact that this class of verbs is consistently associated with an unaccusative syntax in English can be argued to be related to the claim that these verbs are lexically associated with the {GO/BE} value. Accordingly, the lexical item *stay* is prevented from entering into a transitive argument structure of the following type: [$_{F}$ z_1 [$_{X1}$ *{CAUSE/HAVE}* [$_{X2}$ z_2 [$_{X2}$ x_2 y_2]]]].

[17] No favorable/positive claim is then made here concerning the necessity of non-syntactically based lexical decomposition (let's say à la Jackendoff (1990) or Pustejovsky (1995)). See section 5 below for a critical review

morphosyntactically realized as a noun in the (a,b,d,e,f) examples,[18] but is a morphosyntactically unspecified element in the (c,g) examples.

Quite importantly, we want to embrace the non-trivial hypothesis that the only open-ended class of roots is that corresponding to those non-relational elements occupying the specifier and complement positions in (27) (those encoding grammatically irrelevant conceptual content). Accordingly, as far as the syntactically-based lexical decomposition is concerned, we claim that the non-relational element corresponding to the root in (27) is an atom.[19]

(26) a. John corraled the horse.
b. John saddled the horse.
c. John killed the horse.
d. John loved the horse.
e. John kicked the horse.
f. John laughed.
g. The horse died.

(27) a. $[_F$ John $[_{X1}$ CAUSE $[_{X2}$ the horse $[_{X2}$ TCR *CORRAL*]]]]
b. $[_F$ John $[_{X1}$ CAUSE $[_{X2}$ the horse $[_{X2}$ TCR *SADDLE*]]]]
c. $[_F$ John $[_{X1}$ CAUSE $[_{X2}$ the horse $[_{X2}$ TCR *KILL*]]]]
d. $[_F$ John$_i$ $[_{X1}$ CAUSE $[_{X2}$ the horse $[_{X2}$ CCR *PUSH*$_i$]]]]
e. $[_F$ John$_i$ $[_{X1}$ HAVE $[_{X2}$ the horse $[_{X2}$ CCR *LOVE*$_i$]]]]
f. $[_F$ John $[_{X1}$ CAUSE *LAUGH*]]
g. $[_{X1}$ GO $[_{X2}$ the horse $[_{X2}$ TCR *DIE*]]]

Notice then that we have arrived at a very simple theory of what a possible primitive element could be. There are two kinds of primitive elements in our theory of argument structure: relational elements (cf. (17a-b) and the following discussion) and non-relational elements (cf. (17c)). While the number of the former is argued to be finite (in fact, very limited!), the number of the latter can be argued to be infinite.

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of Jackendoff's conceptual approach to lexical decomposition; see Fodor & Lepore (1998) and Uriagereka (1998b) for two critical reviews of Pustejovsky's (1995) account of lexical generativity.

[18] 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(ential)-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.

[19] One important caveat is in order here: The conceptual stuff depicted by capital letters must not be interpreted "as it stands". For example, we do not actually claim that the non-relational element *CORRAL* in (27a) 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 (2001a)). The same holds for the morphologically less transparent cases: e.g., in (43g) what is meant by *DIE* is the non-relational element (i.e., the abstract Ground) included in the change of state verb *to die.* 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 *die* means *go to death* (or alternatively GO TO DEATH). Rather what we claim is that *die* means GO TO *DIE*, where *DIE* is not to be interpreted as *death*, but as the non-relational element (i.e., the abstract Ground) included in the change of state verb *to die.* Similarly, it is also clear that we do not claim that *kill* means to *cause to die* (or alternatively CAUSE (X) to GO TO DEATH): cf. (27c).

On the other hand, we strongly disagree with Fodor's 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 (1990: 40-41):

(28) "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, our theory allows us to maintain the basic intuition involved in the creativity of concept formation that is alluded to by Jackendoff in (28). 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*}[20], which by no means could be assigned the status of *innate* monades.

Moreover, this is also the appropriate place to partake of the debate between Fodor & Lepore (1999) and Hale & Keyser (1999a). In order to provide some background, let us consider Hale & Keyser's (1993: 60) explanation of the ungrammaticality of a sentence like the one in (29), which is argued to have the same argument structure as that of (30). Their relevant explanation is quoted in (31):

(29) * It cowed a calf.

(30) A cow had a calf.

(31) "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., (29)-(30)>: JM&LA) 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 (31) and their corresponding reply is as follows:[21]

(32) "There must be something wrong with HK's account of cases like (29) since, even if it did explain why there couldn't be a *derived* verb *to cow* with the paraphrase in (30), **it does not explain why there couldn't be a *primitive*, underived verb *to cow* with the paraphrase (30)** (<emphasis added: JM&LA>). 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 (29) is that is *impossible* –and not just that *if* it is possible, then it is

[20] *glarf* = non-relational element associated to the invented noun *glarf*; *SNARF* = non-relational element associated to the abstract Ground involved (i.e., incorporated/conflated) in the invented transitive verb *to snarf* .
[21] In order to facilitate the exposition, we have changed Fodor & Lepore's (1999) numeration of the examples.

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, Hale & Keyser's (1999: 463) rejoinder quoted in (33) does not address Fodor & Lepore's main objection, that emphasized in (32) above. In fact, the former limit themselves to pointing out the following explanation that the latter do not actually want to call in question.[22]

(33) "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)

Here is then the story, which is nicely summarized by Uriagereka (1998b: 3-4):

(34) "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;[23] 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 (1998: 3-4)

Rebus sic stantibus, we owe Fodor & Lepore an explanation concerning their objection emphasized in (32) above. To be sure, we agree with them that nobody (linguists included!) has intuitions about primitives. So nothing is gained by pointing out that *to cow* (with the paraphrase in (30)) 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, we think that the success of such a task will depend on having an adequate theory. And here is our theory: As we have emphasized above, the only open-ended class of roots can be argued to be that of those non-relational elements occupying the specifier and complement positions in (18-19-20) (e.g., cf. (27)). 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. There is a very important difference between relational elements and non-relational elements: The

[22] Consider Fodor & Lepore's *concessive* clause in (32): "(...) even if it did *explain* (<emphasis added: JM&LA>) why there couldn't be a *derived* verb *to cow* with the paraphrase in (30)...".

[23] For example, take the ECP as the "principle P" (cf. (31) above). As noted in footnote 22, Fodor & Lepore could actually accept the "technical" argument (cf. the concessive clause in (32)). That is, the "real" problem is another one.

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 can be argued to be fully opaque to grammar.

Notice then that the theoretically sound distinction between relational vs. non-relational elements becomes crucial in our reply: the mere relational nature of the verb *to cow* should prevent us from taking this lexical item as a primitive, since in our theory only non-relational elements can be argued to encode pure (i.e., grammatically irrelevant) 'conceptual content' (cf. supra). Moreover, the kind of background knowledge to be encoded into *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 our reply to Fodor & Lepore's objection is to be seen as compatible not only with Hale & Keyser's claims quoted in (31) and (33), but also with their claim quoted in (35). Here we have limited ourselves to showing that Fodor & Lepore's main objection in (32) should be more properly addressed from the semantic face of argument structure, rather than from the syntactic one (cf. footnotes 22 and 23). Quite importantly, we would like to emphasize that the compatibility of Hale & Keyser's claims with ours can be argued to show up as a result of the homomorphism between those two faces.

(35) "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 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, with Hale & Keyser we cannot take what we see to be what we get. Why? Basically, we cannot do so because we have shown that a minimal lexical syntactic 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-based) lexical decomposition, it is not clear to us which theoretically interesting answer could be provided to those non-trivial questions. To the best of our knowledge, no principled account has been given by Fodor concerning those non-trivial questions addressed by Hale & Keyser (1993), and developed by Baker (1997) or Mateu (1999), among others. No doubt: we are 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, we 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 grammatically relevant aspects of semantic construal and those non-relational elements encoding grammatically irrelevant 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 distinction, notice that the potentially infinite lexical creativity of human beings alluded to by Jackendoff in (28) should not be a problem for us as it is for Fodor.

In the following section, we will compare Jackendoff's conceptual approach to semantic composition with our syntactic approach. Basically, we will concentrate on showing the non-trivial role of syntax when doing lexical decomposition.

5. Towards a syntactically transparent semantic composition

In this section, we will take pains to show some of the benefits from drawing the important distinction in (2) above, that between (non-syntactically transparent) conceptual content and (syntactically transparent) semantic construal. As noted in section 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.

5.1. The basics revisited

In this subsection, we will concentrate on comparing some of the basic arguments for a complex syntax-semantics interface, which are typically found in Jackendoff's work, with our present arguments for a uniform/simple syntax-semantics interface.[24]

Let us then deal with the following basic argument against a simple/uniform syntax-semantics interface, that expressed in (36):

(36) "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* 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 (1997: 33-34)

As shown by Mateu (1999), Jackendoff's argument in (36) is based on a misconception of the syntax-semantics interface. To be sure, Jackendoff is right: lexical categories cannot be defined in terms of pure conceptual content. However, his main error in presenting such an argument is his reducing semantics to notions of conceptual content. Unfortunately, Jackendoff neglects the distinction in (2), 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 (37):

(37) Ns correspond to non-relational elements (i.e., *z*s and *y*s in (38)).[25] Vs correspond to eventive relations (i.e., x_1 in (38)), Ps correspond to non-eventive relations (i.e., x_2 in (38)), and both Adjs and Advs correspond to the x_2-y_2 complex (y_2 being incorporated into x_2). In non-predicative contexts, Adjs typically modify non-relational elements, while Advs typically modify relational elements.

(38) a. transitive structure: $[_F\ z_1\ [_F\ F\ [_{x1}\ x_1\ \ [_{x2}\ z_2\ [_{x2}\ x_2\ y_2]]]]]$

[24] For reasons of space, some intricate arguments like those presented in Jackendoff (1997: chap. 3) will not be reviewed here. We hope to do so in another work. For our present purposes, here we will limit ourselves to dealing with 'the basics'.

[25] Ns like *father* or *destruction* are also to be considered as non-relational *in the sense that* they occupy those slots corresponding to non-relational elements in (38).

b. unergative structure: $[_F\ z_1\ [_F\ F\ [_{x1}\ x_1\ \ y_1]]]$
c. unaccusative structure: $[_{x1}\ x_1\ \ [_{X2}\ z_2\ [_{x2}\ x_2\ y_2]]]$

With Hale & Keyser (1993), we 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'. Here we have pursued 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 (see sections 3 and 4).

Next let us deal with the following basic argument against a uniform syntax-semantics interface: i.e., Jackendoff's (1990: 155-156; 1997: 33-36) recurrent attacks against Baker's U<niformity> <of> T <heta> A<ssignment> H<ypothesis>.

(39) "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&LA)> (...) To claim dogmatically that these surface 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 (1997: 34-35)

Our 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 syntactic structures in (38) encoding *semantic construal*. In striking contrast to Jackendoff's (1990: chap. 11) theory of linking, we posit the following uniform 'linking' on the basis of those structures in (38): the 'external argument' is always to be associated to z_1, the 'direct internal argument' is always to be associated to z_2, and the 'indirect internal argument' is always to be associated to y_2. Quite importantly, the uniformity hypothesis requires then that the 'thematic roles' relevant to UTAH not be drawn from intuition-based {theta-grids/LCSs}. Rather our claim is that they are drawn from syntactic argument structures like those in (38).

It should be clear that our conviction that Hale & Keyser's syntactic approach to thematic structure is more explanatory than Jackendoff's conceptual approach is not merely based on a pure matter of choice. Next we will take pains to show why the approach pursued by the former authors can be argued to be more explanatory than that pursued by the latter author. For our present purposes, the analysis of some simple cases will be sufficient for us to show our main claim.

Consider the examples in (40). Quite importantly, we want to emphasize that it is our present assumptions on argument structure (not our intuitions on semantic representation!) that should lead us to analyze the data in (40) as follows: the transitive structure in (40a) is assigned the argument structure in (41a),[26] the unergative structure in (40b) is assigned that in (41b), and the unaccusative structure in (40c) is assigned that in (41c).

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

(41) a. $[_F$ The chimney $[_F\ F\ [_{X1}$ gave $[_{X2}$ smoke $[_{X2}$ off]]]]]

[26] Following Svenonius (1996) and Hale & Keyser (2000), we assume that bare particles like *off* in (40a) can be analyzed as prepositions incorporating a complement (i.e., the 'Ground'). Accordingly, the birelational nature of prepositional heads is maintained.

b. $[_F$ The chimney $[_F$ F $[_{X1}$ CAUSE smoke]]]
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 he often falls into errors like the following one: the unergative construction in (40b) is incorrectly assigned the Lexical Conceptual Structure in (42). To be sure, both (40b) and (40c) 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!

(42) The chimney smoked.

$$\left[\begin{array}{l} \text{smoke} \\ [_V\ \text{N}] \\ \hline [\text{GO}\ ([\text{SMOKE}], [\text{FROM}\ [\text{IN}\ [\quad]_i\ ]])] \end{array}\right]$$

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

As emphasized by Mateu (1997, 1999), current theories of thematic structure have failed 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, we think that Bouchard's (1995) critical remarks in (43) hold for Jackendoff's (1990) theory of the syntax-semantics interface:[27]

(43) "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 (42). Indeed, (42) can be said to encode (part of) the background knowledge associated to (41b). However, we concur with Bouchard when claiming that (syntactically-based) semantic structures should be purged of that background knowledge that has to do with pure (i.e., grammatically irrelevant) conceptual content.

As noted in (39), Jackendoff criticizes Baker by pointing out that the syntactic position of direct object can express a variety of thematic roles. Clearly, what should be kept in mind is 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), or by Jackendoff (1983, 1990). Rather it is our claim that such a hypothesis should be

[27] See Bouchard (1995) and Mateu (1997) for severe criticisms of Jackendoff's conceptual approach to semantics.

restricted to those non-relational elements to be drawn from syntactic argument structures like those in (38).

Accordingly, we think that Jackendoff missed the point in his criticism of Baker's UTAH (cf. (44)), since the ideal situation alluded to in (44) 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.

(44) "In terms of the simplification of lexical entries, an ***ideal situation*** <(emphasis added: JM&LA)> 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)

In particular, we argue that the *strong* version of UTAH is the correct one, that represented by the following principles in (45), which can be compared to those put forward by Baker (1997), i.e., those in (46).[28]

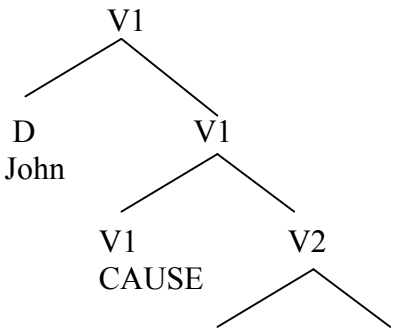
(45) (a) An Originator is the specifier of the functional projection *FP*.
(b) A Figure is the specifier of the non-eventive relation.
(c) A Ground is the complement of the non-eventive relation.

(46) (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 (78) <our (47): JM&LA>":

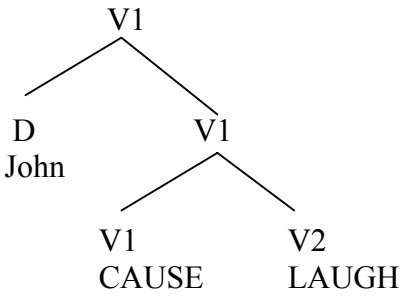
(47) a. Transitive
John cut the bread: [x cause [y be linearly-separated]]



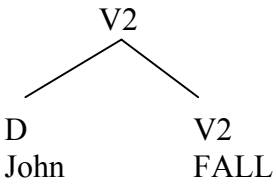
[28] According to Baker (1997: 120), "UTAH is sensitive to a medium-coarse grained version of Theta theory, one that distinguishes three primary (proto-) roles: agent/causer, theme/patient, and goal/path/location. The conditions that it puts on the structural realization of these roles seem to be absolute, rather than relative, and they map the theme to a higher position than the goal".

D V2
the bread CUT

b. Unergative
John laughed: [x cause [LAUGH]]



c. Unaccusative
John fell: [x become [DOWN]]



Baker (1997: 124; ex. (78a-b-c))

Let us then compare Baker's syntactic argument structures given in (47) with those we have argued for in (18-20), repeated in (38). On the one hand, notice that we share Baker's view of transitives: they can be argued to partake of both an unergative structure and an unaccusative one. However, we disagree with his analysis of the degree of complexity inherent to argument structures. For example, consider Baker's analysis of unaccusative verbs. The argument structure depicted in (47c) 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. In fact, Baker does not explain how the projection of the lexical structure *[x become DOWN]* to the syntactic structure in (47c) is to be carried out. Indeed, there seems to be a nontrivial syntactic conflation process involved, which is omitted by Baker.

Moreover, we have argued that unaccusative verbs are not to be regarded as monadic predicates (cf. Mateu (1997, 1999)). Our claim is that unaccusative structures always reflect a Figure-Ground configuration. As can be seen in (38c), *two* non-relational elements are assumed to be syntactically projected: they are related via a non-eventive (i.e., spatial: cf. Mateu (1997, 1999)) relation, which is to be regarded as a *bi*relational element. Unaccusatives are often regarded as monadic predicates because they often project only one surface argument, i.e., the Figure. When dealing with these cases, we claim that the Ground can be argued to be syntactically conflated into the verb. Accordingly, we claim that our (45b) is more accurate than Baker' s (46b): how can we know that *John* is actually occupying a spec position in (47c)? Clearly, our positing a non-eventive birelational element in 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'.

On the other hand, as noted by Baker (1997: 124), his analysis of the argument structure corresponding to unergative verbs (cf. (47b)) parts ways with Hale & Keyser's (1993, 1998) claim that unergative verbs are denominal (cf. (5a)). 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 (48), unergative structures in Basque often correspond to the *N + egin* ('do/make') construction (see Hale & Keyser (1993)).

(48) 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, we take (48) as evidence that the non-relational element involved in the unergative argument structure is prototypically realized as a noun.[29] Notice that pursuing such a hypothesis allows us to maintain Hale & Keyser's claim that verbs (i.e., eventive relations) always subcategorize for a complement.

Despite the above differences between Baker's particular conception of syntactic argument structure and ours, it should be clear that we are all sympathetic to Hale & Keyser's syntactic approach to lexical decomposition. As a result, we agree with Baker (1997: 125) when saying:

(49) "(...) if this kind of lexical decomposition approach begun by Hale & Keyser and brought into the syntax by Chomsky <(1995): JM&LA> 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 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&LA).

Baker (1997: 125-126)

Finally, to conclude our review of "the basics", let us deal with another theoretical device 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.[30]

As is well known, Jackendoff argues that the Theta-Criterion is not a valid hypothesis, because there are 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

[29] It should be clear that we are 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-]].

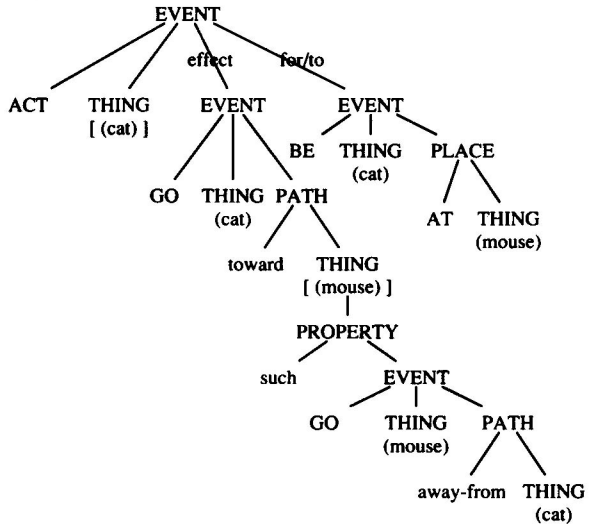
[30] See Hale & Keyser (1993) and Chomsky (1995) for different reasons preventing such a hypothesis from being provided with explanatory/primitive status.

three conditions must be satisfied, those depicted in (50). Its corresponding semantic representation is found in Pinker (1989: 203): see (51).[31]

(50) 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)

(51) The cat chased the mouse.



Pinker's (1989: 203)

Once again our reply to Jackendoff's arguments against the Theta-Criterion is based on the hypothesis that the syntactically relevant theta-roles are not those multiple roles that are drawn from the conceptual content expressed by the verbal predicate. Rather our claim is that the syntactically relevant theta-roles are those ones to be drawn from those syntactic structures encoding semantic construal. In the present case, we want to argue that the argument structure corresponding to the transitive verb *chase* is that in (52):

(52) $[_F$ The cat $[_{X1}$ CAUSE $[_{X2}$ the mouse $[_{X2}$ CCR *CHASE*]]]]

Jackendoff points out that there is no apparent reason to call one of those theta-roles drawn from (50) *the* theta-role of X or Y.[32] To the extent that he is considering the conceptual content, he may be right. However, the conclusion to be drawn from our present paper 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.

[31] According to Pinker (1989: 203), (51) "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'".

[32] See Jackendoff (1990: 60): "If Y is standing still, X isn't chasing Y (though (3a) <our (50a): JM&LA> 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".

It is then important to notice that by adopting the hypothesis in (2), we fully reject Jackendoff's proposal in (53). As far as the syntactically-based semantic construal is concerned, there is no real motivation for admitting an unconstrained richness of thematic roles. In short, we think that Jackendoff arrived at the conclusion in (53) because of his neglecting the role of syntax in constraning the number of theta-roles. To put it differently, he concluded (53) because of his neglecting the distinction between syntactically transparent semantic construal and non-syntactically transparent conceptual content.

(53) "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)

5.2. Multiple argument structures

In this subsection, our goal will be to show that multiple argument structure cases can be analyzed in a more appropriate way under a lexical syntactic approach, rather than under a conceptual approach.

First let us review a well-known case study in the lexical semantics literature, that of the verb *climb*, analyzed by Jackendoff (1985, 1990). The analysis of this case study will also be useful for us to show the necessity of drawing the distinction between conceptual content and semantic construal. [33]

Consider the examples in (54), drawn from Jackendoff (1990: 76).

(54) a. Joe climbed (for hours).
b. Joe climbed the mountain.
c. Joe climbed { down the rope. / along the ridge. / through the tunnel. / etc. }

Jackendoff (1990: 76)

Jackendoff proposes the unification device in (55) in order to account for the argument structure alternations in (54). According to Jackendoff's notation, the Path-constituent in (55) abbreviates the two possibilities in (56): The specification of the culminative Path in (56a) corresponds to (54b), while the unspecified reading of the Path in (56b) corresponds to both (54a) and (54c). In (54a), the unspecified Path in (56b) is not syntactically expressed.

(55)

$$\begin{bmatrix} \text{climb} \\ \text{V} \\ \underline{\quad\quad} \; \langle XP_j \rangle \\ [_{\text{Event}} \; \text{GO} \; ([_{\text{Thing}} \quad]_i \; , \; [_{\text{Path}} \{\text{TO} \; ([_{\text{Place}} \; \text{TOP-OF} \; ([_{\text{Thing}} \quad]_j)])\}]_{\{j\}} \;)] \end{bmatrix}$$

(56) a. $[_{\text{Path}} \; \text{TO} \; ([_{\text{Place}} \; \text{TOP-OF} \; ([_{\text{Thing}} \;]_j)])]$
b. $[_{\text{Path}} \quad]_j$

Jackendoff (1990: 76-77)

[33] See Mateu (2000a) for more discussion on the present case study than that offered here.

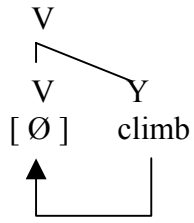
To be sure, the conceptual analysis of (55) relates well with our intuitions about our background knowledge concerning *climb*. However, we claim that argument structures are not to be drawn from non-syntactically based semantic structures.

Furthermore, we would like to emphasize the crucial role of syntax in the task of working out the relevant argument structures. For example, the three 'unaccusative diagnostics' in (57) (auxiliary selection in (57a), postverbal subjects without determiner in (57b), and absolute participial clauses in (57c)) should be enough to show that *climb* in (54a) projects an unergative argument structure.[34]

(57) a. Gianni ha /*è scalato. Italian
Gianni HAS/*IS climbed
a'. dat Jan geklommen heeft/*is. Dutch
that Jan climbed HAS/*IS
b. *Escalan niños. (cf. ^{ok}Llegan niños) Spanish
climb-3rd.pl boys arrive boys
c. *Una vez escalados los invitados, ...(cf. ^{ok}una vez llegados los invitados,...)
once climbed the guests,... once arrived the guests,...

Following Hale & Keyser (1993, 1998), let us assume that unergative verbs like *climb* in (54a) project the argument structure in (58).[35] As noted in section 2, the empty phonological matrix associated to the unergative verb forces the conflation or incorporation of its complement. Moreover, as noted in section 4, the syntactically-based lexical decomposition coincides with a coarse-grained semantic representation: i.e., [$_{X1}$ CAUSE *CLIMB*]]].

(58)



As emphasized by Mateu (2000a), the present hypothesis that a minimal lexical decomposition is *guided* by syntax is not to be mixed with that enterprise carried out by Generative Semanticists *in illo tempore*: We do *not* syntacticize semantic intuitions or encyclopedic knowledge! Intuitions and background knowledge are put aside, and only linguistic/syntactic facts (e.g., cf. (57)) must be taken into account when doing (minimal) lexical syntactic decomposition. Such a methodology explains why, despite appearances/intuitions, *climb* in (54a) cannot be associated to the meaning of unaccusative predicates, i.e., those containing a GO-function plus a PATH-function (cf. (55)).

Moreover, notice that there is no morphosyntactic evidence in (54a) nor in (54b) that leads us to conclude that a spatial relational element has conflated into the verb *climb*. As pointed out by Talmy (1985, 1991), Path elements do not conflate into the verb in English. Rather they are left stranded as 'satellites' around the verb. To be sure, in (54b) *Joe* could be

[34] For more discussion on so-called 'unaccusative diagnostics', see Hoekstra (1984) and Levin & Rappaport Hovav (1995), among many others.

[35] Recall that the external argument (i.e., *Joe*) is to be introduced in the specifier position of the relevant functional projection omitted here (cf. Hale & Keyser (1993f.) or Kratzer (1996), among others).

said to be the entity that has moved to the top of the mountain through his climbing, but it is important to realize that the description of this 'fact' has been syntactically construed not in (54b) but in (59).

(59) Joe climbed to the top (of the mountain).

That is to say, we can grant Jackendoff the following point: i.e., the sentences in (54b) and (59) can be argued (?) to refer to an identical conceptual scene. This notwithstanding, it is our claim that these two sentences represent two very different semantic construals of such a conceptual scene: Let us begin with (54b), which can be argued to be associated to the transitive argument structure in (60):

(60) $[_{F}$ Joe $[_{X1}$ CAUSE $[_{X2}$ the mountain $[_{X2}$ TCR *CLIMB*]]]]

Quite interestingly, Dutch provides us with some evidence for the analysis in (60). The transitive variant in Dutch involves so-called '*be*-prefixation': i.e., *beklimmen*. As argued by Hoekstra (1992) and Mulder (1992), the prefix *be-* can be considered as the S(mall) C(lause) head expressing a kind of 'affectedness meaning'.[36] To the extent that the NP *the mountain* can be taken as the internal subject of a SC predicate expressing affectedness, we can consider it a Theme or Figure.[37]

By contrast, we claim that two different syntactic argument structures are involved in the formation of (59) (cf. *Joe went to the top climbing*): the main unaccusative structure in (61a) and the subordinate unergative structure in (58). Being inspired by Hale & Keyser's (1997:228-229) analysis of unaccusativized unergative verbs, we want to argue that in (61b), the subordinate unergative verb in (58) is conflated/merged into the null verbal head of the main unaccusative structure in (61a), this conflation process being carried out by means of a 'generalized transformation'. Since the empty phonological matrix corresponding to the unaccusative verb is not saturated by its prepositional directional complement (as noted by Talmy (1985, 1991), Path elements do not conflate in English), a complex verbal head from an independent syntactic argument structure (cf. (58)) is then allowed to do so.[38]

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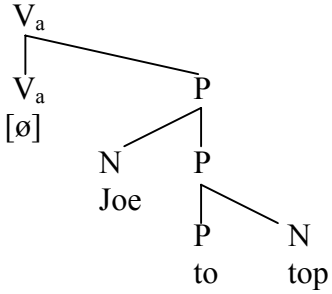
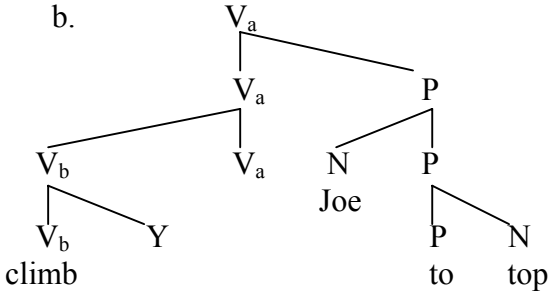
[36] See Mulder (1992: 182): "In those instances where *be-* is obligatory, there is thus a SC complement in Dutch. If we extrapolate the Dutch situation to English, which has no obligatory *be-*, we must postulate an empty SC predicate for those examples that correspond to Dutch *be*-sentences. Thus, by parity of reasoning, imposing the structure proposed for Dutch on the English counterparts, we have clear evidence for the existence in English of an empty SC predicate, functioning as the counterpart of Dutch *be-*. This empty predicate attributes the meaning aspect of total affectedness".

[37] Accordingly, we could pursue the hypothesis that the affectedness meaning boils down to the abstract terminal coincidence relation involved in the transitive variant. We leave this issue open here.

[38] Conflation processes like that involved in (59) are typically found in 'satellite-framed' languages like English or Dutch, but are consistently absent from 'verb-framed' languages like Romance, where it is the Path element that is typically fossilized into the verb (cf. Talmy (1991)). Similarly, examples like those in (i) are also typically absent from Romance (and more generally, from verb-framed languages). See Mateu (2000b, 2001b) and Mateu & Rigau (1999, i.p.).

(i) a. The boat floated into the cave.
b. The truck rumbled into the yard.
c. The dog barked the chickens awake.
d. John sneezed the tissue off the table.
e. John drank the night away.
f. John laughed his way out of the room.
g. John outswam Peter.

(61) a. 

b. 

Our point concerning the present case study is clear: once the distinction in (2) is taken into account, sentences like the unergative *Joe climbed*, the transitive *Joe climbed the mountain*, and the unaccusativized unergative structure *Joe climbed to the top (of the mountain)*, cannot be assigned the same thematic structure. Unfortunately, because of his neglecting the important distinction in (2), Jackendoff falls into the error of attributing these three sentences the same basic meaning, i.e., that involving a GO-function plus a Path-function: See (55). However, we have taken pains to show why we cannot assign the same thematic structure to *Joe climbed the mountain* and *Joe climbed to the top of the mountain*. Our assuming an homomorphic relation between the syntax and semantics of argument structure led us to conclude that both sentences differ not only syntactically but semantically as well, even though they can be argued to refer to a similar conceptual scene.

Our second case study involving 'multiple argument structures' will be useful for us to distinguish Emonds's (1991) syntactically based approach to semantic composition from ours. Quite crucially, it is important to point out that we part ways with Emonds because he introduces conceptual content into the syntax. For example, consider Emonds's (1991: 404) lexical entry of the verb *drink*, that depicted in (62), which is largely inspired on Jackendoff's (1990: 53) one in (63).[39] As is explicitly recognized by Emonds, he incorporates some of Jackendoff's CS-stuff of that verb into the syntax. In doing so, Emonds does not to take into account the distinction in (2) either.

(62) *drink*, V, -L, "nourishment", "activity", +_____(NP "liquid") (P)^NP_i

> "In this entry, I crucially use Jackendoff's notation NP_i to indicate coreference with the subject NP. Thus, NP means a null anaphor of arbitrary interpretation, and NP_i has a (necessarily locally) bound interpretation. These enrichments of syntactic subcategorization, actually a simple extension of existing categories and concepts, are all we need to capture the advantages of Jackendoff's lexical formalisms".
>
> Emonds (1991: 404)

(63)
$$\begin{bmatrix} \text{drink} \\ \text{V} \\ \text{\_\_\_\_\_} < NP_j > \\ [_{\text{Event}}\ \text{CAUSE}\ ([_{\text{Thing}}\ \ ]_i, [_{\text{Event}}\ \text{GO}\ ([_{\text{Thing}}\ \text{LIQUID}]_j, \\ \quad [_{\text{Path}}\ \text{TO}\ ([_{\text{Place}}\ \text{IN}\ ([_{\text{Thing}}\ \text{MOUTH OF}\ ([_{\text{Thing}}\ \ ]_i)])])])])] \end{bmatrix}$$

Jackendoff (1990: 53)

[39] See Emonds (1991: 402-403) for the following formal notations:
(i) -L: -Locative feature (vs. cf. *empty* V, +L)
(ii) +_____(XP): syntactically and semantically present in any case, but XP may be covert.
(iii) +_____ XP: semantically obligatory, but XP must be covert.

Although we are pursuing a syntactically-based approach to semantic composition, it should however be clear that we do not syntacticize conceptual content in our minimal lexical syntactic decomposition approach. In particular, we want to argue that the conceptual content encoded into the root *DRINK* is fully opaque when drawing the syntactically relevant theta-roles. Accordingly, our analyses of the unergative structure in (64a) and the transitive one in (64b) are depicted in (65a) and (65b), respectively. As far as the syntactically-based lexical decomposition is concerned, we claim that the non-relational element corresponding to the root *DRINK* is an atom.

(64) a. John drank (again).
b. John drank it.

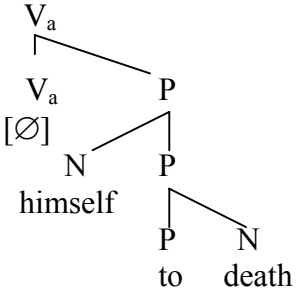
(65) a. $[_F$ John $[_{X1}$ CAUSE *DRINK*]]
b. $[_F$ John $[_{X1}$ CAUSE $[_{X2}$ it $[_{X2}$ TCC *DRINK*]]]]

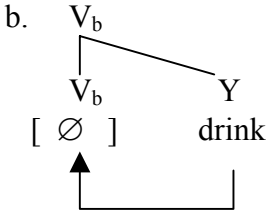
Notice moreover that it is not obvious at all how Emonds would deal with those examples in (66), given his lexical entry of *drink* in (62).

(66) a. John drank himself to death/silly.
b. John drank the pub dry.
c. John drank the night away.

Let us briefly explain how to deal with (66) within our syntactically-based approach to semantic composition. We want to claim that the formation of (66) involves two different syntactic argument structures, those in (67): the main transitive one in (67a), and the subordinate unergative one in (67b).[40] The conflation process in (68) is assumed to be carried out via a generalized transformation: it involves merging the complex unergative head in (67b) into the null transitive verbal head in (67a), the former providing the latter with phonological content.

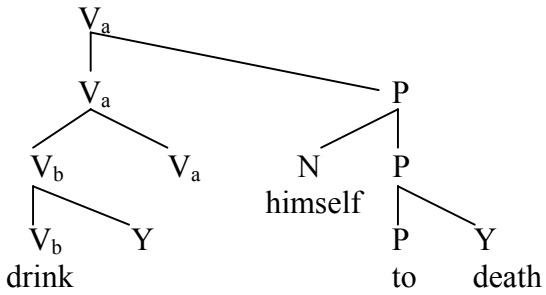
(67)

a.


b.


[40] As noted, the external argument is to be introduced by the relevant functional projection omitted here (see Hale & Keyser (1993f.) or Kratzer (1996), among others).

(68)



Notice that our syntactic analysis is directly inspired by Hoekstra's (1988, 1992) S(mall) C(lause) approach to resultative constructions: see (69). However, in Mateu (2001b) we showed the relevance of the syntactic conflation process involved in (69), which was neglected by Hoekstra. For example, notice that saying that a verb like *drink* can take a 'Small Clause Result' in Germanic languages but not in Romance ones is not but a stipulation. Quite importantly, it has been argued that there is a kind of parametric variation concerning that conflation process involved in constructions like those in (69): Such a conflation process is possible in 'satellite-framed languages' like English or Dutch (cf. Talmy (1991)), but not in 'verb-framed languages' like Catalan or Spanish. For reasons of space, we will omit the relevant lexical syntactic explanation here (see Mateu & Rigau (1999, i.p.) and Mateu (2000b, 2001b)).

(69) a. John drank [$_{SC}$ himself to death/silly]
b. John drank [$_{SC}$ the pub dry]
c. John drank [$_{SC}$ the night away]

6. Conclusions

In this paper we have shown that 'meaning' must be regarded as a function of both (non syntactically transparent) conceptual content and (syntactically transparent) semantic construal.

We have argued that there is an homomorphism between the syntax and semantics of argument structure, which has allowed us to characterize the notion of a possible lexical item (in particular, what is a possible argument structure). Despite Fodor's negative claims, we have shown that the task of working out what a semantic primitive is should be mainly grounded on the basis of the distinction between those grammatically relevant aspects of semantic construal concerning relational elements and those grammatically irrelevant aspects of conceptual content concerning non-relational elements.

Furthermore, we have taken pains to show that one theoretically interesting insight to be found in Hale & Keyser (1993) (to our mind, one that strongly militates against a complex syntax-semantics interface like that envisioned by Jackendoff (1990, 1997)) is their realizing that the following questions are intrinsically related: *'Why are there so few lexical categories?'* / *'Why are there so few thematic roles?'*. By contrast, notice that for Jackendoff it does not make sense to inquire into the relation of both questions. Without doubt, we consider 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 (1995f.).

Moreover, the distinction between conceptual content and semantic construal has led us to posit that the descriptive validity of hypotheses favoring a simple/uniform syntax-semantics interface conception (e.g., cf. the Theta-Criterion or UTAH) can be maintained.

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