

CONSEQUENCES OF PAIR-MERGE (AT THE INTERFACES)

Aritz Irurtzun

University of the Basque Country & HiTT

Ángel J. Gallego

Universitat Autònoma de Barcelona

1. Introduction

The goal of this paper is to explore the basic properties of adjuncts and some of the well-known puzzles these dependents pose for syntactic theorizing within the scenario provided by the Minimalist Program (*cf.* Chomsky 1995 through the present). In so doing, we will briefly discuss some controversial issues, like the argument-adjunct distinction, the status of the (still poorly understood, and worse formally classified) notion of ‘deviance’, and the semantic contribution of adjuncts, but the main focus of this paper will be the formal operation of *pair-Merge*, put forward by Chomsky (2000) and assumed to handle adjunction within the current framework. In league with Uriagereka (2003), we want to argue that adjuncts can give rise to two different readings, which we will call *Markovian* and *non-Markovian*. The first one is quite common in the literature, and plausibly instantiates the Davidsonian analysis, whereby adjuncts are mechanically concatenated predicates of the event. This reading is illustrated in 1, which can be LF-translated as in 2 (focus matters aside; *cf.* Herburger 2000, Irurtzun 2003, 2006, and section 5.1):

(1) Zidane plays soccer gracefully.

(2) $[\exists e: \text{play}(e) \ \& \ \text{Agent}(e, \text{Zidane}) \ \& \ \text{Theme}(e, \text{soccer}) \ \& \ \text{gracefully}(e)]$

Attention must be paid to the LF representation in 2, as there is no scope effect whatsoever, the adjunct just being conjoined to the preceding string. As for what we are referring to as *non-Markovian* reading (by and far, the interesting one), its more salient property is related to a scopal (that is, not merely concatenative) reading of a quantificational sort. This reading is illustrated in 3, which, as the reader may easily conclude, is, at first glance, identical to 1:

(3) Zidane plays soccer gracefully.

What is the difference between 1 and 3? We argue that the *non-Markovian* reading creates a quantificational interpretation, similar to the one explored in Hernanz’s (1993) analysis of free adjuncts. In particular, 3 can be roughly paraphrased as follows: “if/whenever Zidane plays soccer, he does so gracefully”. The intended reading is perhaps more salient in 4.

(4) Zidane plays soccer gracefully, but he plays basketball horribly.

In section 5 we propose an analysis for this variety of adjuncts, but before that, we need to spell-out what our assumptions on the issues to be discussed are, and what is at stake when we talk about adjuncts.

The paper is divided as follows: section 2 concentrates on the notion of deviance and some of its interpretations within the literature; in section 3 we turn our attention to the basic operation within minimalism (*i.e.*, *Merge*), and the particular variety which deals with adjunction, *pair-Merge*; in section 4 we present arguments in favor of the (neo-)Davidsonian treatment of adjuncts and briefly consider some accounts in which adjuncts are taken to be necessary for the sentence to be well-formed (in connection with what was said in section 2); section 5 is the empirical focus of this paper, for it considers the *non-Markovian* readings; section 6 summarizes the main conclusions.

2. Adjuncts and the Strong Minimalist Thesis

In this section we would like to consider the relation between Narrow Syntax and the so-called Interfaces, particularly so with respect to the connection between the SEM component (formerly, viewed as the LF level of representation) and the Intentional-Conceptual systems. We can formulate our aim here through the following question:

(5) What are the requirements imposed by the external (interpretive) systems?

The question in 5 is obviously related to what Chomsky (1995) calls *convergence* and *crash*: roughly put, a derivation converges at the interfaces if its (legibility) conditions are satisfied.¹ As Chomsky (1995, 2000) puts it, such notions must not be misunderstood: they are determined by formal inspection, hence not constituting an “obscure and intuition-bound notion” like those inherited from more traditional studies. At this point, it is useful to underscore that one of the most important achievements by generative grammar is to put forward an explicit system which leaves no room to intuitive approaches to grammatical phenomena —this was, as a matter of fact, one the reasons to eliminate the notion of “well-formedness”:

One of the “obscure and intuition-bound notions” that should be clarified or eliminated is set of well-formed (grammatical) expressions (E-language, in the terminology of my Knowledge of Language (1986), henceforth KOL). Though unproblematic (by stipulation) in the theory of formal languages, the notion remains obscure, perhaps lacking any empirical status, for natural language [...]. The issues are far from academic. It is well known that any 2-category partition of expressions will undercut much of the most significant linguistic work. The differential effects of ECP, subjacency, selectional constraints, etc., are far more revealing than any division into well- versus ill-formed, and bear directly on central principles of UG. In contrast, the point of a [\pm WF]-dichotomy remains obscure, even if it can be established in some nonarbitrary fashion. Suppose that Jones has

¹ Obviously, convergence is nothing but a new name to the Full Interpretation Principle (cf. Chomsky 1986a, 1995).

the I-Language L, some variety of English. As far as is known, it is meaningless to ask whether a weak wh-island violation or such an expression as “misery loves company” is, or is not, a member of the E-language weakly generated by L; and nothing would follow from a discovery (or stipulation) one way or another. These expressions have their status, determined by L; they are parsable, appropriate in certain situations, have a definite meaning, etc. (Chomsky 1990: 143, 145)

Chomsky’s (1990) point is easy to spell-out: expressions must reach the interpretive systems in such a way that they can receive an interpretation, that being all SEM can plausibly manipulate. Needless to say, interpretations may have a vast (and often unexpected) range of possibilities, some of them plausibly considered as deviant, but this must not mislead us, for deviance is not, unless we define it in a fine-grained way (and we lack any method for that, as far as we know), a criterion to rule out expressions. Let us suppose, following Chomsky (1990, 2000, 2005), the next working hypothesis:

(6) SEM assigns linguistic expressions an interpretation

The statement in 6 is not to be understood as an output filter (or an internal principle), it is just a consequence of the idea that syntax is an optimal solution to interface matters —Chomsky’s (2000) *Strong Minimalist Thesis*. In the case at issue, by proposing 6 we are assuming that SEM cares about one thing, to be able to assign an interpretation to the expressions the computational system generates. But even if we assume so, it is important to be clear about what determines if expressions receive ‘an interpretation’. Feature checking, in the sense pursued since Chomsky (1981), is a familiar candidate to test this. Consider the data in 7:

- | | |
|-----------------------------------|-------------------------------------|
| (7) a. *María cantamos. (Spanish) | b. *Me se entregó. (Spanish) |
| María sing-3.PL | CL-to-me CL-to-him/her gave-up-3.SG |
| ‘María sing’ | ‘He gave me to him/her’ |

Note that the problem in 7 is not only that those sentences are unintelligible: they are uninterpretable. Thus, the problem is not semantic in any obvious way (the theta affairs of those expressions make perfect sense), but rather syntactic: in both cases, agreement fails, which can be formally expressed by arguing that Chomsky’s (2000; 2001) *Agree* cannot value the (uninterpretable) ϕ -features of the functional categories T and v^* , hence causing a crash. Consider next the sentences in 8, which are interpretable, however odd they may sound:

- | |
|--|
| (8) a. María es lingüista amablemente. (Spanish) |
| María be-3.SG linguist gently |
| ‘María is a linguist gently’ |
| b. María se leyó el libro durante dos horas. (Spanish) |
| María CL read-3.SG the book during two hours |
| ‘María read the book during two hours’ |

Like 7, the sentences in 8 are usually ruled out as ungrammatical by most scholars and grammar books, so are the ones in 9, 10, and 11, for reasons we return to:

- (9) a. Love fears the chair. b. Golf plays John.
 c. Colorless green ideas sleep furiously.
- (10) a. Elena drank a beer during 5 minutes.
 b. Elena saddled the horse during 1 hour.
- (11) a. Mary arrived the book in the table.
 b. Juan went the car. c. Juan broke.

It is common practice in the literature to sanction these sentences as ill-formed by appealing to semantic notions, like selectional and subcategorization features (in Chomsky's (1965) sense) or *Aktionsart*. As we just said, it may perfectly be the case that the expressions in 8 sound deviant, but this must not lead us to conclude that they must undergo syntactic licensing before reaching SEM, let alone that they cannot be generated, since actually they can. Let us be a little bit more specific: what is the problem with these sentences? Under fairly standard accounts, 8a and 8b are said to be out because adjuncts must meet aspectual requirements, but this is odd to say the least, because adjuncts do not participate in *Aktionsart* business—only objects do (see Harley 2003). In sum, arguing that adjuncts must undergo syntactic licensing is not only empirically wrong, but conceptually problematic as well.²

Our reasoning is a *non*-standard one, undoubtedly, and we could be urged to answer whether this is not too generous an account, one opening *Pandora's Box*. We believe it is not. This observation could be made, for instance, by approaches like Bosque's (1989), which could be taken as a proposal in which adjuncts must be licensed:

We might recall that the so-called adjuncts are not freely added to any given predicate, for it is obvious that not all of them denote actions or proceses which take place at a time and are carried out in a certain manner, with a certain goal, and in a certain place. If the sentence Juan bought a yacht allows manner adjuncts, while Juan has a yacht does not, it is because inserting adjuncts is not as free as is normally thought. [from Bosque (1989: 137)—our translation, AI & AG]

Once again, notice how Bosque's (1989) perspective raises conceptual and empirical questions. On conceptual grounds, it seems rather sensible to us that sentences like 8, 9, 10, and 11 have no problems upon reaching SEM. Empirically, the issue

² This is also clear from what can be gathered from the GB literature, where (to the best of our knowledge) there was no Adjunct Criterion oposed to the Theta Criterion (cf. Chomsky 1981). Likewise, the presence of modifiers in traditional transformational grammars of the Standard Theory and Extended Standard Theory is regarded as optional, not having any phrase structure rule specific for them.

arises as to what mechanisms are to be invoked to license adjuncts. In principle, one could postulate different devices to rule in adjuncts (*e.g.*, SPEC-head configurations, agreement processes, etc), and further proceed to find out whether it is empirically satisfactory, but this is not the issue: the issue is whether there is *bona fide* evidence that there must be something like such devices (apart from our intuition, of course).

Consider, in this respect, the examples 12:

- (12) a. *Furiously sleep ideas green colorless.
 b. *What_i did Mary believe [the idea that John bought t_i]?
 c. *Where_i have you bought that book [because John was t_i]?

There is a very telling difference between 8-9-10-and-11 *vis-à-vis* 12: the latter cannot (and are not) generated. For us, all the cases in 8, 9, 10, and 11 are semantically odd, causing a post-SEM problem, about which we do not have anything useful to say.³ What is going on in 12 is somewhat (and crucially) different: we are before syntactic violations of both context-free 12a and context-sensitive processes 12b,c.

In what follows we will be assuming this stiff viewpoint, and will be concerned with properties that adjuncts display on purely computational grounds, hence avoiding any account in which adjuncts must be licensed. In order to restrict the range of data, we will limit ourselves to the study of what Ernst (1998) calls participant or semi-argumental adjuncts, which could be said to receive theta-roles like /Goal/, /Instrument/, /Benefactive/, /Locative/, /Source/, and /Manner/; as a matter of fact, here we will be assuming that adjuncts relate to the main (verbal) predicate through a variety of theta-roles, in the sense of what Larson & Segal (1995) discuss.

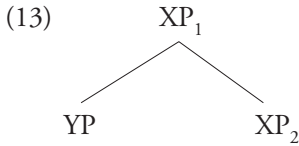
3. Adjuncts and pair-Merge

Before delving into the different readings adjuncts may give rise to, we must assess the technical details of these dependents: their formal nature, the SEM and PHON puzzles they give rise to, and the operations that have been put forward to handle them.

Within minimalism, there is one basic structure-building operation, *Merge*, which inherits the role of X-bar algorithms of previous models. Since Chomsky (2000), *Merge* is assumed to come into two flavors: *set-Merge* and *pair-Merge*. The former is the minimalist alias for *substitution* and is of little interest in what we have to say here (it creates regular phrase-structure configurations); *pair-Merge*, obviously, replaces *adjunction* and constitutes the focus of this paper.

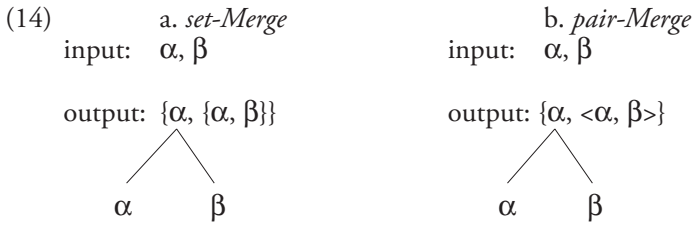
The most standard account of adjunction goes back to May's (1985) and Chomsky's (1986) analyses, whereby a category is split into (two) segments, as depicted in 13:

³ Furthermore, the oddity of this type of sentences can be exploited to gain a poetic function; thus, it is not uncommon to see sentences akin to those in 8-10 in poems (in fact, even the famous 9c has been used in such a way by authors like John Hollander and Clive James). Sentences like those in 12 on the other hand are restricted to examples of agrammaticality in theoretical linguistics bibliography



The goal of 13, or any notational variant of it, is to render YP (*i.e.*, the adjunct) structurally out-of-sight so that all formal structural dependencies one can think of cannot apply (*e.g.*, dominance, c-command, sisterhood, etc.). This is intended to capture the inherent asymmetry Chomsky (2004) thinks adjunction involves, with adjuncts playing no syntactic role. The main idea is, details aside, the same that Chomsky (1995) put forward when he cornered adjuncts out of Narrow Syntax given that they participate in no computational business (*e.g.*, they form no thematic configuration, they enter into no Case assignment mechanism, etc.), they are just ‘there’, as Boeckx (2003) puts it, being interface-driven creatures.

Within minimalism, the formal distinction between set-Merge and pair-Merge is expressed as in 14:



14b differs from Chomsky’s (1995) ‘Bare Phrase Structure’ formulation in that the asymmetry is captured in the operation rather than in the label. Here we will adopt the specifics of Chomsky’s (2004) analysis of adjuncts, and his idea that these syntactic objects are placed in a separate plane. This view is consistent with Lebeaux’s (1991) findings about anti-reconstruction effects without violating cyclicity, and dispensing with late-insertion analyses (*cf.* Lebeaux 1991 and Stepanov 2001):

- (15) a. $[_{CP} [_{DP} \text{Which picture [that John}_z \text{ took]}]_i \text{ did he}_z \text{ like the most } t_i \text{]?}$
 b. $*[_{CP} [_{DP} \text{Which claim [that John}_z \text{ did not like Mary]}]_i \text{ did he}_z \text{ made } t_i \text{]?}$

In 15a there is no Condition-C effect because the relative clause, being an adjunct, does not need to reconstruct in the first-Merge position of the object DP. Chomsky (2004), nevertheless, does not preclude the possibility of having reconstruction effects when the structure is shipped to the interfaces. Hence, he proposes that the complex (recall, in parallel) structure is undone when *Transfer* applies by means of an operation called *Simplification* (SIMPL) —actually, an optional part of *Transfer*. The ‘optional’ part is relevant, for it correctly predicts both 15a and 16, as noted in Gallego (2006), where the adjunct does reconstruct in the first-Merge position of the object DP.

- (16) $[_{CP} [_{DP} \text{Which papers [that he}_z \text{ wrote]}]_i \text{ did every linguist}_z \text{ publish } t_i \text{]?}$

In 16 the QP *every linguist* binds the pronoun *he*, indicating that SIMPL affects the lowest position of the chain, not the one that gets transferred to the PHON component. This is not an original datum, all in all, for it was already noted by Lebeaux (1991), who used examples like 17 to support a late-insertion analysis of adjuncts:

- (17) [_{CP} [Which paper that he_j gave to Bresnan_z]_i did every student_j think that she_z would like t_i]]?

In 17, the relative clauses must be simplified in the SPEC-C position of the embedded verb (*like*), the position where the relevant binding effect applies.

Together with these binding data, there are further grounds to think that adjuncts manifest a paratactic nature (or *Markovian*, to use Uriagereka's 2004 terminology). If so, we expect for adjuncts to trigger weak semantic effects, along with null context-sensitive consequences. We believe this is true, and from this it follows the concatenative (scopeless) nature of adjuncts we mentioned at the outset. Things being so, we do not expect the sentences in 18 to be different, truth-conditions-wise.

- (18) a. John kissed Mary passionately in the park.
b. John kissed Mary in the park passionately.

Plausibly, the semantic interpretation of the examples in 18 is a direct consequence of adjuncts not creating regular phrase structure configurations, but a more limited, *Markovian*-like, array. More data can be used to make the same point. Consider the examples in 19, adapted from Uriagereka (2003): only the adjunct in 19a licenses the NPI, a fact we take to suggest that adjuncts-to-the-left give rise to *bona fide* phrase structure (in particular, we want to argue that such adjuncts are merged as SPECS).

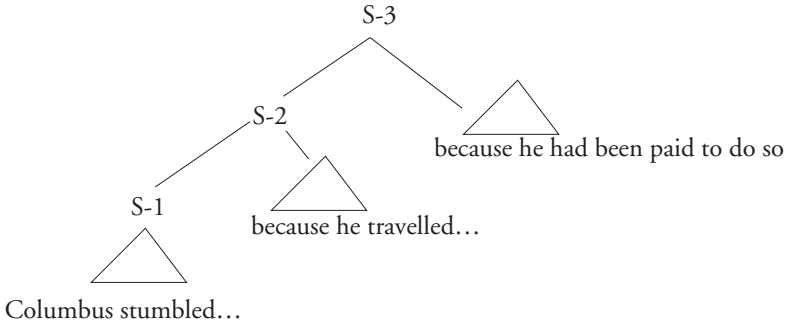
- (19) a. Bajo ninguna circunstancia puede ningún chico hacer eso. (Spanish)
under no circumstance can-3.SG any boy do-INF that
'Under no circumstance can any boy to-do that'
b. *Puede ningún chico hacer eso bajo ninguna circunstancia. (Spanish)
can-3.SG any boy do-INF that under no circumstance
'Any boy can do that under no circumstance'

Ellipsis processes also confirm Chomsky's (2004) pair-Merge analysis. Lasnik & Uriagereka (2005) note that in a sentence like 20 the gapping chunk *do so* can be interpreted either as 21a or as 21b, the reading in 21c being impossible.

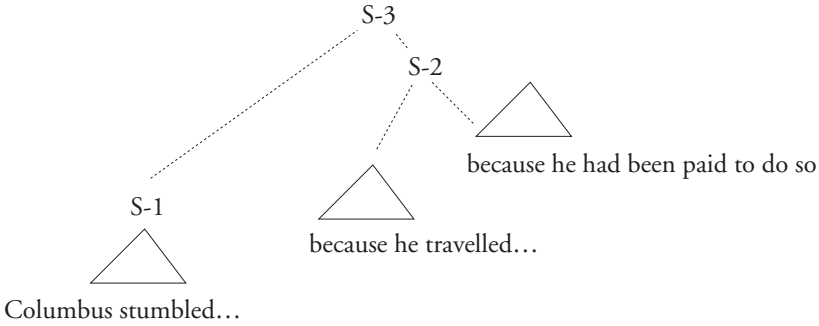
- (20) Columbus stumbled onto Santo Domingo because he travelled parallel...
... to the Equator from the Canary Islands because he had been paid to *do so*.
(21) a. do so: Travel parallel to the Equator from the Canary Islands
b. do so: Stumbled onto Santo Domingo
c. do so: *Stumbled onto Santo Domingo because he travelled parallel...
... to the Equator from the Canary Islands

This fact argues, yet again, for the *Markovian* syntax of 24, for neither 22 nor 23 would do: the former would predict 21c is possible, while 22 would rule out the interpretation in 21b.

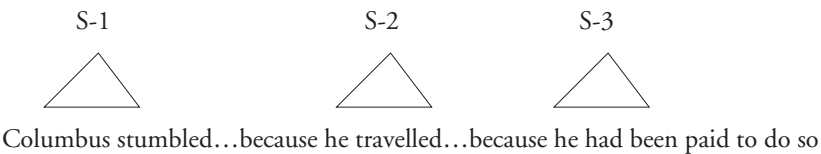
(22)



(23)



(24)



But adjuncts not only posit semantic puzzles, they do linearization ones as well: on the one hand, these dependents seem to combine in a regular fashion with the VP, scoping over whatever they adjoin to, but they normally appear to the right, which, under any version of Kayne's (1994) LCA, predicts that they should be to the left. Martin & Uriagereka (2000) consider three possible solutions to this paradox:⁴

- (25) a. Kayne's (1994) LCA is wrong.
- b. Final linear order obtains by means of massive realigning movements.
- c. No command relations can be established in adjunction.

⁴ An alternative route is taken by Larson (2004), who, in order to capture the NPI, binding, linear order and focus properties of adjuncts, assumes that adjuncts Merge with the verb before arguments do.

Martin & Uriagereka (2000) dismiss 25a and 25b, endorsing 25c. As these authors note, 25c may well be the solution Chomsky (1995: 339) hints in passing, when he defines *c-command* as in 26:

(26) *C-command*

X *c-commands* Y if (a) every Z that dominates X dominates Y and X and Y are disconnected.

Here, the ‘disconnected’ part of the definition in 25 is the key, for it is concerned with the segment/category distinction we considered above (*cf.* May 1985 and Chomsky 1986). In this respect, Chomsky (1995: 340) notes that “[i]f ‘disconnected’ in [26] requires [strong] dissociation of X, Y —say, that neither is a segment of a category that contains the other— then no ordering is determined for [X, YP₁] by the LCA.” We will assume that this is precisely what pair-Merge buys us, a weak form of dissociation in which no label is created (*cf.* Chametzky 2000, Hornstein *et al.* 2005, Moro 2000, and Uriagereka 2003). This solves the technical problem about the LCA, but we are not done yet: even if adjunction does not create a canonical phrase structure dependency, we do not want adjuncts to be completely dissociated from the VP they modify, so we must find an alternative, *c-command-less*, modification dependency which captures the scope effects and linear order we have seen in section 1. By exploiting the notion of *Numeration* (NUM; *cf.* Chomsky 1995), Uriagereka (2003) suggests a dynamic activation procedure that derives both linear order and scope effects. In this paper, we will assume this proposal, whose details are as follows:

(27) *Syntactic Activation*

A syntactic object SO is activated when it leaves a Numeration NUM and enters a derivational workspace D_{WS}

We also assume 28:

(28) *Consequences of Syntactic Activation*

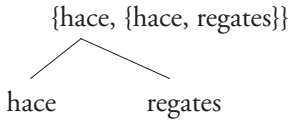
A modifier’s derivational activation directly determines its linear order and scope.

27 and 28 are not principles, but rather particular assumptions about the nature of derivational dynamics. 27 is relevant in that it capitalizes on ordering, but, crucially, we want it to apply to both arguments and adjuncts. However, when applied to the former, regular *c-command* relations emerge, and 28 becomes useless: linear order and scope are not decided during the computation, but at the interfaces. We want to argue that 27, together with the particular effects of pair-Merge, is what allows us to seriously entertain 28: since *c-command* is unavailable, the system resorts to an internal device in order to yield the desired output. Let us test this process with the example in 29b, with the NUM in 29a:

- (29) a. {C₁, T₁, Zidane₁, v*₁, hace₁, regates₁, elegantemente₁, rápidamente₁}
 b. Zidane hace regates elegantemente rápidamente. (Spanish)
 Zidane do-3.SG dribblings gracefully quickly
 ‘Zidane makes dribblings gracefully quickly’

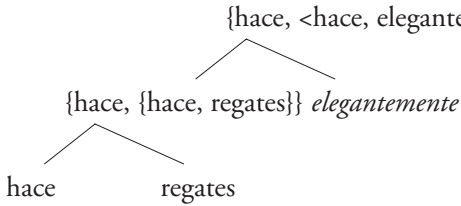
The first derivational step involves the creation of a verb-complement dependency by activating *hace* and *regates*. Crucially, set-Merge suffices to do that:

(30) $\{C_1, T_1, Zidane_1, v^*_1, hace_0, regates_0, elegantemente_1, rápidamente_1\}$



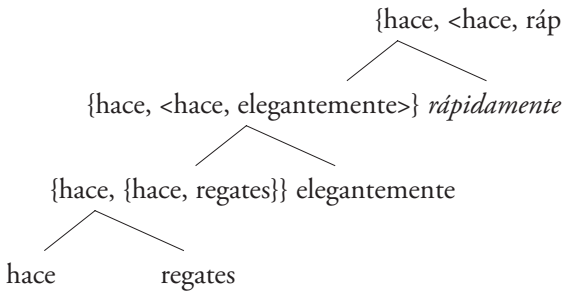
In the next step, the adjunct *elegantemente* is activated. Since pair-Merge creates no new label, 28 overrides the interface role of Kayne's (1994) LCA.

(31) $\{C_1, T_1, Zidane_1, v^*_1, hace_0, regates_0, elegantemente_0, rápidamente_1\}$



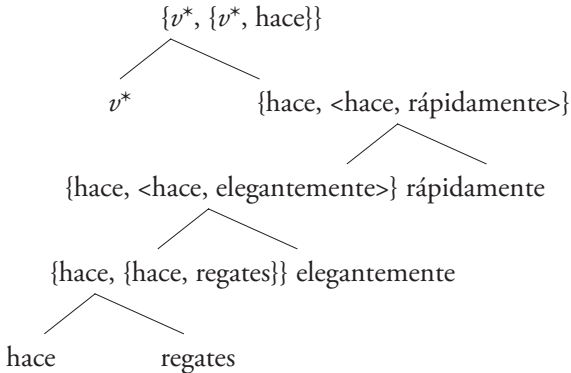
The adjunct *rápidamente* is activated next:

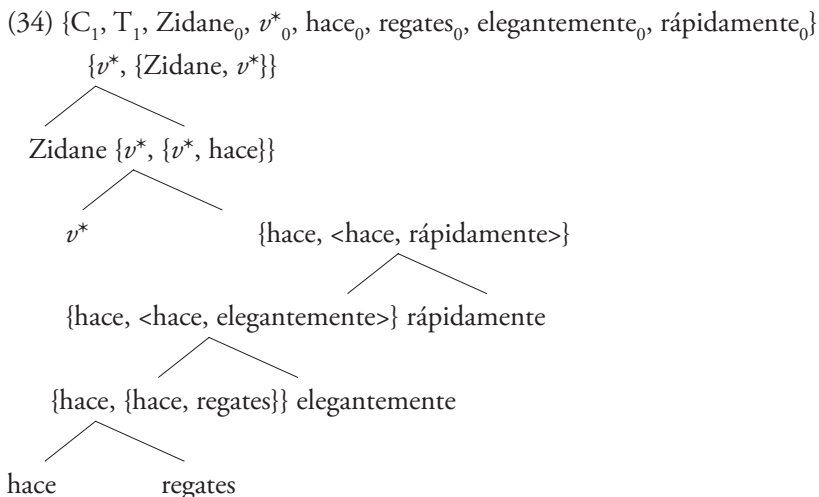
(32) $\{C_1, T_1, Zidane_1, v^*_1, hace_0, regates_0, elegantemente_0, rápidamente_0\}$



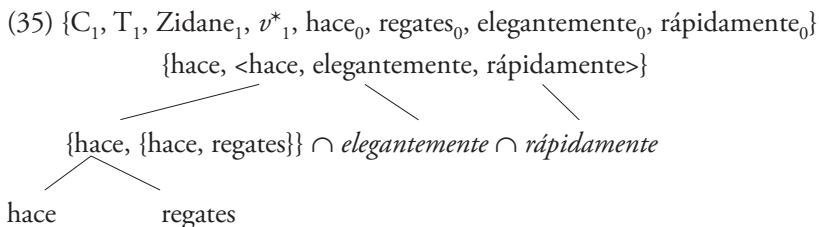
The following operations involve set-Merge of v^* and the external argument, the DP Zidane.

(33) $\{C_1, T_1, Zidane_1, v^*_0, hace_0, regates_0, elegantemente_0, rápidamente_0\}$





But we are cheating. The derivation from 30 to 34 is actually the one we will assign to *non-Markovian* readings of adjuncts. The syntax of purely *Markovian* readings would still stick to Chomsky’s (2004) pair-Merge, the activation procedure applying in a different mode: all adjuncts would be activated ‘at the same time’ (in the same ‘dimension’, to use Uriagereka’s 2003 terms),⁵ as shown in 35:



In 35, the adjuncts *elegantemente* and *rapidamente* stand in a structural relation that has no scope import whatsoever, thus accounting for the scopeless, list-like, interpretation of adjuncts.

This is enough for this section. In the preceding lines, we have seen some of the most important properties which make adjuncts special creatures. These concern (but are not restricted to) linearization, binding, and semantic effects, which makes us believe it is reasonable for them to be introduced by an additional mechanism: Chomsky’s (2004) pair-Merge. Before focusing on the two readings adjuncts can trigger, in the next section we will explore the basic semantic import of adjunct elements, and will discuss their impossibility of having them in verb-meanings. The corollary of this discussion will be that semantically adjuncts are just like they are syntactically; *i.e.* just adjuncts.

⁵ In (34), we assume that the computational system can operate with more than one syntactic object at once, so we cannot call this instance of Merge ‘pair’-Merge.

4. Semantic import of adjuncts

Having stated that adjuncts are merged in a separate plane *via* the structure-building operation of pair-Merge, in this section we are going to analyze the semantic import of adjuncts and the way they contribute the meaning of an utterance. Basically, the question we want to analyze is the following one:

(36) Do adjuncts show the same semantic import as arguments?

First we should make clear that, as already stated, in this work we are just going to observe a small subset of adjuncts, namely, those adjuncts that appear at the right edge of the clause. Unfortunately, we don't have much to say about the semantics of more problematic left peripheric scopal adjuncts (speaker oriented adverbs and so (*cf.* Fodor 1972 for discussion on these issues)). To begin with, we will review very briefly a possible analysis of adjuncts as being selected by the predicate, that is, as saturating a verbal function. Then, we will show that this type of analysis is mislead and will propose that, just like in syntax, in semantics adjuncts are just that; adjuncts (*i.e.*, they are not selected by the verb (not even the so-called *necessary* ones)). The argumentation will be based in the potential unboundedness of adjunct clustering and the analytic relations between sentences with and without adjuncts. In order to capture these properties, we propose an eventish semantics whereby adjuncts are (just) event predicates introduced *via* predicate-concatenation.

4.1. Adjuncts in verb-meanings

One of the most widely held analysis of verb-meanings takes verbs to denote open functions that get saturated with the arguments they take. Thus, the lexical entry of the verb 'stabbed' in 37 would be something along the lines in 38:

(37) Brutus stabbed Caesar. (38) $\lambda y.\{\lambda x. \text{true iff } x \text{ stabs } y\}$

That is, the transitive verb 'stab₂' denotes a dyadic function that will give the value *true* in case 'x stabs y'.⁶ Thus, an analysis of adjuncts as being directly selected by the verb would require, in a functionalist approach to verb meanings like the one in 38, a richer lexical entry for the verb in 39 in order to accommodate the insertion of the adjunct 'in the ides of March'. It could be represented as in 40, where *t* denotes a temporal variable.

(39) Brutus stabbed Cesar in the ides of March.

(40) $\lambda y.\{\lambda x.\{\lambda t. \text{true iff } x \text{ stabs } y \text{ in } t\}$

One could wonder for the necessity of including the adjunct in the verb-meaning, after all, it seems to be just optional. However, this claim is controversial, and some constructions where adjuncts are apparently needed have been claimed to show the need for the inclusion of these elements in verb-meanings. In section 2 we advanced some cases, here we will be more explicit in order to show the problems that such a position entangles. For instance, Grimshaw (1990) observes that in some construc-

⁶ We will use subscript numbers to signal the number of arguments that a predicate takes.

tions like the passive in 40, the appearance of an adjunct seems to be mandatory, thus, 41a, with the agent expressed, is completely grammatical whereas 41b is ungrammatical (according to the judgments in Grimshaw 1990):

- (41) a. The city was destroyed *by the enemy*. b. *The city was destroyed [Ø].

Furthermore, the data in 42 reported by Grimshaw & Vikner (1993) would show that it is not strictly the agent what is lacking in a passive, but just any type of adjunct:

- (42) a. *This house was built. c. This house was built yesterday.
b. This house was built by a French architect.

Similarly, another type of research that would show the need of the insertion of adjunct-like information in verb-meanings would be the contextualist approach of ‘Unarticulated Constituents’ (*cf. i.a.*, Recanati 2002). According to this trend of research, a predicate like ‘to rain’ metaphysically demands a place to apply, and so, if not explicitly provided in the syntax, this information has to be provided by the context, to give a value to a covert variable (ζ):

- (43) It is raining $_{\zeta}$.

These data, if consistent, could be taken to force the introduction of adjuncts (or a variable for content of an adjunct in the case of 43) in the lexical entries of predicates. However, as we argue in the next section, we believe that this analysis is misguided.

4.2. Problems for this analysis

We think that there are two main sets of interrelated problems for an analysis that purports the lexical requirement of adjuncts:⁷ (i) the fact that adjunction can take place unboundedly, and (ii) the mysterious analyticity between sentences with adjuncts and sentences without them.

(i) *Adjunction without limits*: it is a truism that a sentence can potentially have an unbounded number of adjuncts. As an example, observe sentence 44, taken from Bresnan (1982):

- (44) Fred deftly handed the toy to the baby by reaching behind his back over lunch at noon in a restaurant last Sunday in Back Bay without interrupting the discussion.

Here, notwithstanding the issue about the argumentality of the dative phrase ‘to the baby’, eight adjuncts can be clearly identified: ‘by reaching’, ‘behind his back’, ‘over lunch’, ‘at midnight’, ‘in a restaurant’, ‘last Sunday’, ‘in Back Bay’ and ‘without interrupting the discussion’). The example stops there but we could add as many spatio-temporal or purpose clauses as we can imagine. Then, the question is that postulating a lexical requirement for adjuncts would require a very complex entry for the predicate ‘to hand’ in this case, and, basically, different and *ad hoc* lexical entries for

⁷ Here we will provide counterarguments only to the idea that adjuncts are required syntactically, and we won’t talk about the contextual variable approach. See Cappelen & Lepore (2005) for a critique of such a view.

each time a predicate appears with an adjunct. This argument brings us to the second problem that we observe with a proposal that postulates the lexical requirement of adjuncts: the analyticity problem.

(ii) *Inferences that should not exist: analytic relations*: Postulating a lexical requirement for adjuncts implies, for instance, postulating different lexical entries for the predicate ‘to stab’ in 45 and in 46, the first one would be a ternary predicate (‘to stab₃’) that requires the syntactic presence of two participants and a time, and the second one a binary predicate that just requires two participants (‘to stab₂’):

(45) Brutus stabbed₃ Cesar in the ides of March.

(46) Brutus stabbed₂ Cesar.

Such is the logic implied the argument: there we have two different and independent lexical entries; ‘to stab₃’ and ‘to stab₂’ (in principle, as independent as ‘elbow’ and ‘paraphrase’), but so it happens that they denote the same type of event and they have the very same phonological matrix, roughly /stæb/. Obviously, the problem lies in the purported independence between the predicates in 45 and 46, given that English speakers know analytically, *i.e.* independently of facts, that whenever the content of 45 is true the content of 46 is also true (the same as with the causative-inchoative alternation (*cf.* Pietroski 2003)). Again, the remarkable fact about this is that the relation between those sentences is analytical; our very knowledge of English suffices to provide this information. Thus, the only way to explain the analyticity of the inference having two independent predicates would be *via* the introduction of a meaning postulate relating both predicates; something like 47:⁸

(47) Stab₃(*x*, *y*, *t*) ↔ Stab₂(*x*, *y*) & Time(*t*)

And, obviously, the problem is that if adjunction can apply without limits, there should be as well an unlimited number of meaning postulates relating predicates with adjuncts and predicates without them. Thus, we don’t believe that an analysis based on the lexical necessity of adjuncts is of the right track.

In the next section we propose to analyze adjuncts in a different manner; as predicates of the event introduced by conjunctions.

4.3. Proposal: adjuncts and predicate conjunctions

Having stated the problems of an analysis of adjuncts as lexically required by the verb, our goal in this section is to analyze the semantic import of adjuncts. Our analysis will be based in the Davidsonian tradition (*cf.* Davidson 1967a, Taylor 1985 among others). According to this trend of analysis adjuncts add a predicate to the event denoted by the verb. Thus, for instance, sentence 46, repeated here as 48a for convenience, has the LF in 48b whereas sentence 45, 49a here, corresponds with the logical form in 49b:⁹

⁸ In order to be consistent with the proposal we are discussing we are using functionalist representations for the predicate.

⁹ We abstract away from the representation of tense for simplicity.

- (48) a. Brutus stabbed Cesar.
 b. $\exists e$ [Stab(e) & Agent(e, Brutus) & Theme(e, Caesar)]
- (49) a. Brutus stabbed Cesar in the ides of March.
 b. $\exists e$ [Stab(e) & Agent(e, Brutus) & Theme(e, Caesar) & Temporal Location (e, ides of March)]

Following Davidson (1967a), this type of representation allows us to account for the paradigm of entailments of 50:

- (50) a. Brutus stabbed Cesar in the back with a knife.
 b. Brutus stabbed Cesar in the back.
 c. Brutus stabbed Cesar with a knife.
 d. Brutus stabbed Cesar.

Having these four sentences, we observe that the proposition expressed by sentence *a* entails all *b*, *c*, *d*, as well as the conjunction of *b* and *c*, that *b* entails *d* and, likewise, that *c* entails *d*. Obviously, neither *b*, nor *c*, nor *d* entails *a*, but the crucial fact is that the conjunction of *b* and *c* doesn't entail *a*. As pointed out by Davidson, we can account for these patterns of entailment if we take the modifiers in 50 to be pure adjuncts, predicates of the event denoted by the verb. Thus, in a neo-Davidsonian fashion, the LF representations of the sentences in 50 would be those in 51, with the correlation $x \rightarrow x'$:

- (51) a'. $\exists e$ [Stab(e) & Agent(e, Brutus) & Theme(e, Cesar) & Spatial-Location(e, back) & Instrument(e, knife)]
 b'. $\exists e$ [Stab(e) & Agent(e, Brutus) & Theme(e, Cesar) & Spatial-Location(e, back)]
 c'. $\exists e$ [Stab(e) & Agent(e, Brutus) & Theme(e, Cesar) & Instrument(e, knife)]
 d'. $\exists e$ [Stab(e) & Agent(e, Brutus) & Theme(e, Cesar)]

With this type of representation, the entailment pattern is naturally explained as entailments between the LFs of the propositions expressed by the sentences.

Furthermore, the possibility of adjunction without limits doesn't create any problem since adjuncts are introduced as such, as adjuncts to the event by predicate conjunction.

In the next section we will explore the nature of adjunct clustering departing from this analysis of adjunct semantics.

5. Adjunct clusters and the interpretation of non-Markovian adjuncts

In this final section we would like to propose a syntax from which *non-Markovian* readings can follow. As advance in the outset, Uriagereka (2003) analyzes clustered adjunction as giving rise to two types of modification patterns: a *Markovian* one and a *non-Markovian* one. The first one arises when adjuncts show up in a paratactic fashion, creating no scope/framing effect among them (this is, in short, the reading corresponding with the Davidsonian treatment of adverbs); as for the *non-Markovian* one, it involves a framing effect. Martin & Uriagereka (2000) discuss left-to-right scopal effects as we saw in the introduction, but we can also find the opposite pattern whereby the outermost adjunct is somehow interpreted within the syntactic projection of the innermost one. Consider, to see this, 52, which can display both interpretations:

- (52) Juan se cayó por borracho por idiota. (Spanish)
 Juan CL fell-3.SG because drunk because idiot
 ‘Juan fell because (he was) drunk because (he was) idiot’

→ *Markovian* (scopeless):

‘The reasons why Juan fell are that he was drunk, idiot, etc.’

→ *Non-Markovian* (scopal):

‘The reason why Juan fell is that he was drunk, which, in turn, happened because we was an idiot’

Compare next 52 with 53, where the adjunct ordering is reversed:

- (53) Juan se cayó por idiota por borracho.
 Juan CL fell-3.SG because idiot because drunk
 ‘Juan fell because (he was) idiot because (he was) drunk’

→ *Markovian* (scopeless):

‘The reasons why Juan fell are that he was drunk, idiot, etc.’

→ *Non-Markovian* (scopal):

‘The reason why Juan fell is that he was an idiot, which, in turn, happened because we was drunk’.

Note that the *Markovian* reading is semantically identical in both 52 and 53, regardless of linear order, for adjuncts show no scope effects. Things are different when it comes to the *non-Markovian* reading: in those cases, adjuncts involve a different (*non*-paratactic or scopal) syntax with *non*-trivial consequences for the semantics. The reality of the scopal facts can be clearly illustrated as in 54a (in Spanish, and without any list intonation), where the cause of the event of Juan’s scare is the scar, which was caused by the accident; but, crucially, the intentional cause of Juan’s scare cannot be the accident, nor the cumulating force of the scare and the accident. Thus, as we will argue, the bare concatenative LF of 54b will not be accurate to represent the *non-Markovian* meaning of 54a (*pace* Parsons 1990):

- (54a) Juan se asustó por la cicatriz por el accidente. (Spanish)
 Juan CL scared-3.SG because the scar because the accident
 ‘Juan scared because of the scar because of the accident’
 (54b) $\exists e$ [scare(e) & Experiencer(e, Juan) & Cause(e, scar) & Cause(e, accident)]

Furthermore, an LF along the lines of 54b would entail that of 54c, quite inconveniently, since, remarkably, 54a does not entail 54d under the relevant reading (the accident can be completely unknown to Juan):

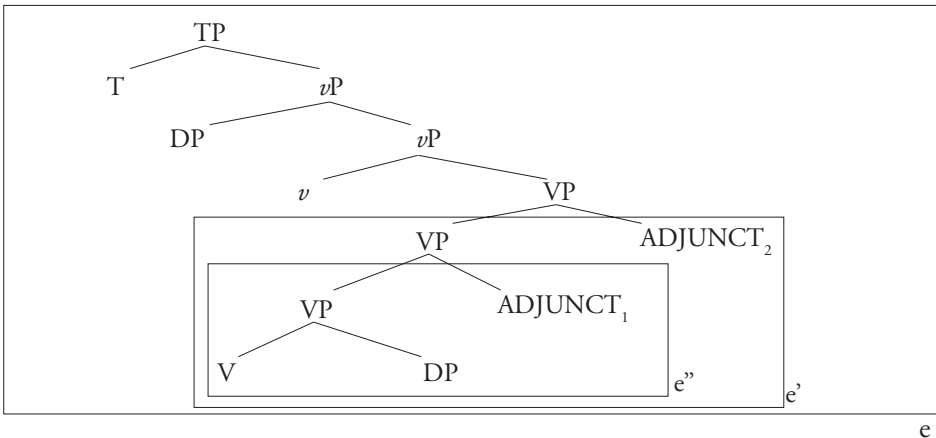
- (54c) $\exists e$ [scare(e) & Experiencer(e, Juan) & Cause(e, accident)]
 (54d) Juan se asustó por el accidente. (Spanish)
 Juan CL scared-3.SG because the accident
 ‘Juan scared because of the accident’

Interestingly enough, this pattern does not appear to be restricted to one type of adjunct. That is to say, regardless of the particular semantics (*i.e.*, cause, location, condition, etc.), different adjunct clusters behave as just indicated, hence potentially displaying two readings. This holds in the case of conditional adjuncts:

- (55) a. Uno de los dos se va a tener que ir si me pegas...
 one of the two CL go-3.SG to have-INF that go-INF if CL-me hit-2.SG
 ... si digo lo que pienso. (Spanish)
 if say-1.SG the that think-1.SG
 ‘One of the two of us will have to leave if you hit me if I say what I think’
- b. Uno de los dos se va a tener que ir si digo...
 one of the two CL go-3.SG to have-INF that go-INF if say-1.SG
 ... lo que pienso si me pegas. (Spanish)
 the that think-1.SG if CL-me hit-2.SG
 ‘One of the two of us will have to leave if I say what I think if you hit me’

So, how could we capture the semantics of these structures? Recall that in these cases each of the adjuncts denotes an event. This is patently true for the cases of 55, but we believe that it is also true for the cases of 52-53 and 54, where each of the adjuncts denotes a cause relating two events (*cf.* Pietroski 2000). Thus, we propose that in order to capture the *scopal reading*, we would need to enrich the LFs of these sentences by postulating the introduction of a new *subevent* in each syntactic subcycle. This is depicted in 56:

(56)



This type of syntactic structuration provides us immediately with the ‘framing’ semantics we observe in these constructions. Then, for instance, the LF representation we propose for the *non-Markovian* reading of 52 is the following one:

- (57) $\exists e$ [Theme(e , Juan) & Falling(e) & $\exists e''$ [Cause(e , e'') & Experiencer(e'' , Juan) & Being-drunk(e'') & $\exists e'$ [Cause(e'' , e') & Experiencer(e' , Juan) & Being-idiot(e')]]]

This type of representation captures the scopal character of these adjunct clusters where each adjunct takes scope over (or frames in a new subevent) the previous chunk of structure. The question, now, is how to get both representations from the very same syntactic structure. Our solution to this issue is to deny it; that is, to deny that both readings have the same underlying syntactic structure. Recall that in our discussion of the *Markovian* reading we underlined that the order of the adjuncts doesn't matter, as there is no scopal effects among them. Thus, a natural way to capture this fact would be to posit that these adjunct clusters are created in a separate plane as such, and then introduced as a cluster to the rest of the derivational spine (*cf.* 35). It would be then this latter pair-merge what would give the adjuncts their modification pattern. In the case of *non-Markovian* clusters like these, as we said before (*cf.* 34), each of the adjuncts would be introduced separately, triggering in each instance of pair-merge a 'framing' effect with the introduction of a new eventuality.

5.1. Two types of non-Markovian adjunct clusters

We just saw that adjunct clusters give rise to two types of readings: a *Markovian* one where there is no scope among the adjuncts and a *non-Markovian* one where there are clear scopal effects. Observe now the data in 29, modified here as 58:

- (58) Zidane hace regates elegantemente fácilmente. (Spanish)
 Zidane do-3.SG dribblings gracefully easily
 'Zidane makes dribblings gracefully easily'

There the *Markovian* reading would be like those observed for previous clusters, *i.e.*, that of a purely conjunctivist-concatenative adjunct cluster (*cf.* Davidson 1967b, Taylor 1985). Hence, we would want to propose that the LF of these readings is something along the lines in 59:

- (59) a. $\exists e$ [Agent(e, Zidane) & do(e) & Theme(e, dribblings) & Manner(e, easy) & Manner(e, elegant)] (=59b)
 b. $\exists e$ [Agent(e, Zidane) & do(e) & Theme(e, dribblings) & Manner(e, elegant) & Manner(e, easy)] (=59a)

However, note that, as we said in the introduction, the scopal reading of this sentence is the reverse of the ones in 52-53 and 54: here, the innermost adjunct seems to take scope over the outermost one. Similar observations are made by Ernst (2000; 2002), who discusses sentences like those in 60, where the outermost adjunct does not create a particular cycle within the innermost one, but rather the other way around.

- (60) a. They run fast awkwardly, but run slowly smoothly.
 b. They play soft well enough, but play loudly pretty poorly.

The question that arises at this point is this: what are the semantics of this type of expressions? Note here that these adjuncts, contrary to those involved in 52-54, do not denote eventualities, but rather, they are plane predicates of the event denoted by the verb, pure modifiers, then. Roughly, the first part of 58a is interpreted as follows: 'whenever they run fast, they run fast awkwardly'. In other words, the seman-

tics of these *non-Markovian* adjuncts is akin that of conditionals of the sort ‘P in any event in which Q’, as analyzed by Lycan (2001), of the form ‘P if Q: (e)(In(e,Q) \supset In(e,P)). In this vein, in order to capture the assertive nature of these constructions we would like to suggest that these *non-Markovian* (scopal) constructions are to receive the LF of 61, involving a universal quantification:

(61) $\forall e$ [run(e) & Agent(e, they) & Manner(e, fast)] & Manner(e, awkwardly)

It is worth pointing out that, although ultimately departing from the type of framing effect previously discussed, 61 is nonetheless similar to it in that the canonical paratactic reading vanishes. However, the modification pattern is the opposite one. The crucial point, we believe, is the focus-background partition of the clause. Recall that the LF representation in 61, with a restricted quantification over events, shows the same structure as the LFs of focus-affected readings (*cf.* Herburger 2000). Thus, we believe that this is what could be at hand in the scopal effects observed in such constructions: a pure effect of focus (hence, the likeliness of having them in a contrastive environment like in 60). In fact, note that this type of manner adjunct clusters that create a framing effect cannot be uttered in *out-of-the-blue* environments, and they have to be accompanied by a clear topic —comment intonation contour.¹⁰ Thus, the conclusion is that the scopal effect of these adjunct clusters would not derive from a framing-activation syntax like the one represented in 56, but from independent sources; the focus-background partition of the clause:¹¹

(62) [They run fast]_{Background} [AWkwardly]_{Focus}.

In fact, from a functionalist point of view, it shouldn’t be surprising that adjuncts get focused. As we saw in sections 3 and 4, they are not selected by the verb and, if they appear in the derivation, it is likely that they have such an interpretation. Then, if both manner adjuncts in the cluster are to be focused we get the *Markovian* reading, with no scope among them. If only one of them is focused, we get the *non-Markovian* reading of 61, but as we said, this reading is triggered just by having focus on one of the adjuncts. If it is the outermost one, the background-focus partition of the clause might be masked by the fact that in *out-of-the-blue* sentences nuclear stress also falls in the rightmost position.¹² If it is the innermost adjunct that is focused, its focal status is clearer, given that the intonational structure of the clause is also affected.

The corollary of this discussion would be that event-denoting adjuncts can create framing effects on their own, just by being activated in separate planes. Then, the outermost adjuncts (or events) frame the innermost ones. The case of *non-eventive* adjuncts is different since the framing effects they lead to are the opposite as those of the eventive ones. Furthermore, additional evidence supports this thesis. The data we have in mind is provided by Hernanz’s (1993) free adjuncts, which display the same eventive reading we are interested in:

¹⁰ Contrary to the event-denoting adjunct clusters that are naturally uttered in *out-of-the-blue* environments.

¹¹ Capital letters indicate the nuclear stress placement.

¹² However, as we said, the topic intonation of the pre-focal chunk makes clear the intended reading.

- (63) En París, María estudia.
 In Paris, María study-3.SG
 ‘If/When she is in Paris, María studies’

The interesting thing to note about 63 is that, just like the data in 52 through 55, the adjunct is somehow interpreted as denoting an event (of course, using the term ‘event’ in a wide sense and covering all sorts of eventualities, including ‘states’). Quite crucially for our purposes, manner adverbs, like the ones in 58 and 60, cannot trigger this ‘eventive’ reading:

- (64) Tranquilamente, María estudia.
 Peacefully María study-3.SG
 ‘María studies peacefully’

In plain terms: 64 does not mean ‘if she is quite, María studies’. This contrast suggests, once again, that there is something deep that teases event-denoting and *non*-event-denoting adjuncts apart: plausibly, as we have suggested, this follows from the latter class of modifier not being able to license an eventive subcycle. Although promising and certainly accurate (at least in descriptive terms), we cannot fail to mention that more needs to be said about these facts: how does this asymmetry affect semantic ontologies?, does it have a syntactic reflex (in phrase structure terms)?, etc. Interesting issues that we leave open for future research.

6. Summary and Conclusions

Here we have analyzed the basic nature of adjuncts as optional and *non*-selected elements (not even in the cases of the so-called ‘obligatory adjuncts’). We showed that an argumental view of adjuncts (*cf.* Grimshaw 1990, Grimshaw & Vikner 1993) is either *ad hoc* as to which adjuncts are argumental or would require the insertion of an infinite number of meaning postulates relating adjunct taking and not-taking verbs.

Summarizing, our analysis of adjuncts explores the possibility that the operation of pair-Merge has both Narrow Syntactic and Interface-like properties of its own. First, it creates ordered pairs, not sets, which can be assumed to follow from adjuncts living in a “separate plane”. As for the interfaces, pair-Merge has a special status as well: on the phonologic side, it poses an *a priori* knock down problem for Kayne’s (1994) LCA (trivially solved, if pair-Merge involves no c-command paths before Spell-out); on the semantic side, it creates “predicate composition”, together with extremely interesting interpretive effects. Following Martin & Uriagereka (2000) and Uriagereka (2003) we adopt the idea that adjuncts display two types of readings, a *Markovian* and a *non-Markovian* one: under the first one, adjuncts are interpreted as independent predicates of the event (the traditional approach stemming from Davidson 1967a), whereas under the second one, adjuncts create a framing (scopal) effect which blocks the expected entailment patterns. The two readings, we argued, derive from the different syntactic composition of the adjunct clusters.

References

- Boeckx, C., 2003, «Review of T. Ernst, 2002», *The syntax of adjuncts*, Cambridge U. P., «Studies in the Linguistic Sciences» 32. 95-101.
- Bosque, I., 1989, *Las Categorías Gramaticales*. Madrid: Cátedra.
- and P. J. Masullo, 1998, *On Verbal Quantification in Spanish, Studies on the Syntax of Central Romance Languages* ed. by O. Fullana & F. Roca, Girona: U. Girona, 9-64.
- Bresnan, J., 1982, «Polyadicity», *The Mental Representation of Grammatical Relations* ed. J. Bresnan, Cambridge (MA): MIT Press, 149-172.
- Cappelen, H. and E. Lepore, 2005, *Insensitive Semantics: A Defense of Semantic Minimalism and Speech Act Pluralism*, Oxford: Blackwell.
- Chametzky, R. A., 2000, *Phrase Structure: from GB to Minimalism*, Malden: Blackwell.
- Chomsky, N., 1965, *Aspects of the Theory of Syntax*. Cambridge: MIT.
- , 1981, *Lectures on Government and Binding: The Pisa Lectures*. Dordrecht: Foris Publications.
- , 1990, «On Formalization and Formal Linguistics», *NLLT* 8, 143-147.
- , 1986, *Knowledge of Language: Its Nature, Its Origins, Its Use*, New York: Praeger.
- , 1995, *The Minimalist Program*. Cambridge: MIT Press.
- , 2000, *Minimalist Inquiries: The Framework. Step by Step: Essays in Minimalist Syntax in Honor of Howard Lasnik* ed. by D. Michaels, R. Martin & J. Uriagereka, Cambridge (MA): MIT Press.
- 2001, *Derivation by Phase. Ken Hale: A Life in Language*, ed by M. Kenstowicz. Cambridge: MIT Press. 1-52.
- 2004, «Beyond Explanatory Adequacy, Structures and Beyond». *The Cartography of Syntactic Structures*, Volume 3 ed. by A. Belletti, Oxford/New York: Oxford U. P., 104-131.
- 2005, *On Phases*. manuscript: MIT.
- Davidson, D. D., 1967a, *The Logical Form of Action Sentences, The Logic of Decision and Action* ed. by N. Rescher, Pittsburgh: University of Pittsburgh Press [Reprinted in D. Davidson. *Essays on Actions and Events* (2. ed.). Oxford/New York: Oxford U. P., 105-122].
- 1967b, *Reply to Martin, The Logical Form of Action Sentences. The Logic of Decision and Action* ed. by N. Rescher. Pittsburgh: University of Pittsburgh Press [Reprinted in D. Davidson. *Essays on Actions and Events* (2. ed.), Oxford/New York: Oxford U. P., 129-148].
- Ernst, T., 1998, «The Scopal Basis of Adverb Licensing», *Proceedings of NELS* 28, 127-142.
- 2002, *The Syntax of Adjuncts*. Cambridge: Cambridge U. P.
- Fodor, J. A., 1972, *Troubles About Actions. Semantics of Natural Language* ed. by D. Davidson and G. Harman. Dordrecht: Reidel. 48-69.
- Gallego, Á. J., 2006, «Connectivity in Markovian Dependencies». Manuscript: UAB.
- Grimshaw, J., 1990, *Argument Structure*, Cambridge (MA): MIT Press.
- and S. Vikner, 1993, *Obligatory Adjuncts and the Structure of Events, Knowledge and Language: Vol. II Lexical and Conceptual Structure* ed. by E. Reuland & W. Abraham, Kluwer, Dordrecht, 145-159.
- Harley, H., 2003, «How do verbs get their names? Denominal verbs, Manner Incorporation and the ontology of verb roots in English». Manuscript: U.Arizona.
- Herburger, E., 2000, *What Counts: Focus and Quantification*. Cambridge (Mass.): The MIT Press.

- Hernanz, M. Ll., 1993, «A propósito de los adjuntos libres». *Sintaxi. Teoria i Perspectives*, ed by in A. Viana. 125-173.
- Hornstein, N., J. Nunes and P. Pietroski, 2005, *Some Thoughts on Adjunction*, manuscript. UMD-USP.
- Irurtzun, A., 2006, «Focus & Clause Structuration in the Minimalist Program». *Minimalist Theorizing* ed. by C. Boeckx. Berlin: John Benjamins. 68-96.
- 2003, *The Locus of [+F]ocus*, ms: EHU-UPV.
- and Á. J. Gallego, 2004, *Adjuntos concatenados y (sub)cyclos sintácticos*. Paper presented at the XXXIV Simposio de la Sociedad Española de Lingüística, Madrid.
- Kayne, R., 1994, *The Antisymmetry of Syntax*. Cambridge: MIT Press.
- Larson, R., K. and G. Segal, 1995, *Knowledge of Meaning*. Cambridge: MIT Press.
- Lasnik, H. and J. Uriagereka, 2005, *A Course in Minimalist Syntax*. Oxford: Blackwell.
- Lebeaux, D., 1991, *Relative clauses, licensing and the nature of the derivation*. *Syntax and Semantics 25: Perspectives on phrase structure*, ed. by S. Rothstein. New York: Academic Press. 209-239.
- Lycan, W. G., 2001, *Real Conditionals*. Oxford: Oxford U. P.
- Martin, R. and J. Uriagereka, 2000, *Collapsed Waves*. Manuscript: U. Tsukuba & UMD.
- May, R., 1985, *Logical Form*. Cambridge: MIT.
- Moro, A., 2000, *Dynamic Antisymmetry*. Cambridge: MIT Press.
- Parsons, T., 1990, *Events in the Semantics of English*. Cambridge: MIT Press.
- Pietroski, P., 2003, *Small Verbs, Complex Events: Analyticity Without Sinonimy*. *Chomsky and his Critics* ed. by N. Hornstein and L. Antony. Oxford: Blackwell, 179-214.
- 2000, *Causing Actions*. Oxford: Oxford U. P.
- Recanati, F., 2002, «Unarticulated Constituents», *Linguistics and Philosophy* 25. 299-345.
- Stepanov, A., 2001, «The Timing of Adjunction», *Proceedings of NELS* 30. Amherst: GLSA. 597-611.
- Taylor, B., 1985, *Modes of Occurrence: Verbs, Adverbs & Events*. Oxford & NY: Blackwell.
- Uriagereka, J., 2003, *Pure Adjuncts*. Manuscript, UMD.
- 2004, *Where do Adjuncts Live?* Manuscript: UMD & UPV-EHU.
- Vendler, Z., 1967, *Linguistics in Philosophy*. Ithaca: Cornell U. P.