Discourse Phenomena as a Window to the Interfaces*

Alba Cerrudo
alba.cerrudo@gmail.com

Abstract

This paper examines the two lines of analysis that are generally pursued when dealing with discourse phenomena in the generative tradition: syntactico-centric and interface-based approaches. Syntactico-centric analyses are criticized because they need construction-specific mechanisms, while interface-based analyses sometimes challenge standard assumptions about the architecture of grammar. The discussion is mainly theoretical, but three case studies serve as exemplification: focalization, ellipsis and parentheticals. The second part of the paper is focused on parentheticals; a brief proposal is presented regarding the distinction between *free* and *anchored* parentheticals from a syntax-phonology interface perspective. The general conclusion is that following an interface-based perspective to approach discourse phenomena can help us gain new insights about the nature of the interfaces and their role in grammar.

Keywords: syntax-phonology interface; cartography; ellipsis; focalization; parentheticals

Resum. *Els fenòmens discursius com una finestra a les interfícies*

Aquest article examina les dues línies de recerca que se segueixen generalment quan s'estudien fenòmens discursius en la tradició generativista: enfocaments sintàctico-cèntrics i d'interfície. Critiquem les propostes sintàctico-cèntriques perquè necessiten fer ús de mecanismes específics per analitzar cada construcció en qüestió, mentre que les propostes d'interfície de vegades posen en dubte l'arquitectura gramatical estàndard. La discussió és fonamentalment teòrica, però s'utilitzen tres casos d'estudi: la focalització, l'el·lipsi i els parentètics. La segona part de l'article se centra en els parentètics; es presenta una proposta bàsica per formalitzar les diferències entre parentètics lliures i ancorats (ang. *free* i *anchored*) des d'una perspectiva d'interfície sintaxi-fonologia. La conclusió general és que seguir una línia d'anàlisi d'interfície per tractar els fenòmens discursius pot ajudar-nos a comprendre millor la naturalesa de les interfícies i el seu paper a la gramàtica.

Paraules clau: interfície sintaxi-fonologia; cartografia; el·lipsi; focalització; parentètics

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1. Introduction

If syntax is an optimal solution to satisfy interface conditions (Chomsky 2000), the study of the interfaces should have a central role in our research agenda. On the empirical side, discourse phenomena seem the perfect research field to study syntax and the interfaces at the same time, since these phenomena are characterized by showing special properties at every level of grammatical analysis (including pragmatics). Nonetheless, there is a very influential trend in the generative literature that pursues the *syntactization* of discourse (Haegeman & Hill 2013), that is, the total encoding of discourse phenomena in narrow syntax. Not all authors agree when evaluating the explanatory power of this kind of proposals and most of the discourse phenomena that cartographic analyses explore have received an alternative account. What all these alternatives have in common is that they take the burden from syntax and put it somewhere else in the grammar. This second kind of approaches to discourse go beyond the specific phenomena under study and make predictions about the architecture of grammar and the role of the interfaces on it. Both types of proposals have their own problems, but I believe that those that try to encode everything in syntax always need construction-specific mechanisms, while the same does not hold necessarily for those that also look at the interfaces. I will focus specifically on the syntax-phonology interface to illustrate this claim, looking at three different constructions: ellipsis, focalization and parentheticals.

The paper is structured in two parts. The first one (section 2) is a general theoretical discussion of these two types of approaches to discourse phenomena, based on two examples: focalization and ellipsis. The second part (section 3) focuses on parentheticals as a case study, including both a critical evaluation of previous proposals (according to the two categories presented at the beginning) and a sketch of a syntax-phonology interface proposal to analyze parentheticals, with implications for the theory of linearization and Spell-Out.

2. Two kinds of approaches to discourse phenomena

'Discourse phenomena' is a broad label that might include very different types of linguistic structures and processes (see Rigau 1981), ranging from any phenomena beyond the sentence to language-use-related notions (Schiffrin, Tannen & Hamilton 2011). These two key aspects are found in focalization and ellipsis, which are the chosen phenomena in this paper to discuss what are the kind of approaches to discourse that can be found in the generative literature. On the one hand, their analysis requires to resort to pragmatic concepts, such as given/new or background/focus

(see Vallduví & Engdahl 1996 for a review). On the other hand, these notions need context (more than one sentence) to be evaluated: the information structure of a given sentence depends heavily on its linguistic context and ellipsis always involves more than one sentence (in the sense that there must be an antecedent) and could be a process that operates across utterances.[1] Other classical examples of discourse phenomena could be the study of connective elements (conjunctions, interjections, particles, discourse markers) and the investigation of reference across utterances (deixis, anaphora, cataphora, etc.). This section deals only with focalization and ellipsis because they both have received an analysis from the syntax-phonology interface side and, under this perspective, they can be seen as two sides of the same coin: ellipsis as radical deaccentuation of background information and focalization as stress on new/contrastive information.[2]

There is a growing body of literature on both ellipsis and focalization, so the goal of this section is not to offer a comprehensive overview, just to review some representative analyses in order to discuss the existing approaches to discourse phenomena. Specifically, I will focus on the theoretical positions of these approaches with respect to the role of syntax and the interfaces. A distinction can be established between those proposals that put all the burden on syntax and those that resort to the interfaces. I will refer to the first kind of analyses as *syntactico-centric* and to the second kind as *interface-based*. Syntactico-centric analyses presuppose that everything must be encoded in syntax because there is a strictly direct mapping between syntax and both interfaces, following the traditional Y-model. On the other hand, interface-based approaches tend to simplify syntax and propose interface conditions or operations instead, some of them at the cost of challenging the Y-model. This second type of proposals vary more on their assumptions than syntactico-centric analyses do, and this is one of the reasons for choosing two phenomena that have received an analysis based on the phonological component. The case study of the second part of the paper, parentheticals, will also receive an analysis based on the syntax-phonology interface. In the remainder of this section, I consider each of the two opposite views in turn, syntactico-centric and interface-based, and their application to the analysis of focalization and ellipsis.

2.1. Syntactico-centric approaches

The most influential syntactico-centric approach to discourse is the Cartographic project (Rizzi 1997 *et seq.*; Cinque 1999, 2002; Belletti 2004; Cinque & Rizzi 2008, a.o.). According to Rizzi's (1997) seminal work, the C node can be decomposed into a series of heads, each of them projecting its own phrase in a fixed functional sequence, as in (1).

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1. If one adopts the analysis of fragment answers as remnants of ellipsis (Merchant 2004), the antecedent in these cases would be a previous utterance (a question asked by another speaker).
2. In addition, ellipsis seems to be an important phenomenon in parenthetical constructions, as recent studies have shown (Döring 2015; Ott & Onea 2015; Ott 2016b; Stowell 2017).

(1)   ForceP > TopicP > FocP > FinP[3]

These four heads compose the left periphery of the clause: ForceP contains illocutionary features, TopicP hosts topicalized constituents in its specifier (CLLD in Romance), FocP does the same with foci (and wh-elements)[4] and FinP, being the head closer to T, is related to tense and mood (it is supposed to host complementizers lower than those on ForceP). This framework can be defined by two principles: firstly, the so-called "One feature one head", the assumption, rooted on Pollock's (1989) work, that each morphosyntactic feature corresponds to an independent syntactic head with a specific slot in the functional hierarchy (Cinque and Rizzi 2008: 50); secondly, the Criterial approach (Rizzi 1997, 2004), which explains topicalization and focalization as movement processes, triggered by criterial features. The topicalized/focalized constituent is argued to be endowed with topic or focus features that must be checked against the relevant head in a Spec-Head configuration. Thus, topics and foci are assumed to move from their base position in the clause to the dedicated specifiers in the left periphery. Rizzi (2006) explicitly argues for a uniform treatment of A and A'-movement, the former being triggered by formal (uninterpretable or unvalued) features (as proposed in Chomsky 1995, 2001, 2004) and the second by semantic or criterial features.

A number of empirical challenges for the cartographic project have been raised in the literature (see van Craenenbroeck 2009 for a review). For instance, Neeleman and Van de Koot (2008) show that topics and foci can occur in a wide variety of structural positions in Dutch (see also Neeleman et al. 2009; Wagner 2009 and Nielsen 2003), and Bañeras (2016) offers some data from the combinatorial possibilities in the Spanish left periphery that challenge the fixed functional sequence in (2).[5] However, what I want to discuss here are the conceptual shortcomings of the cartographic project (cf. López 2014; Reinhart 2006; Gallego 2013, 2014; van Craenenbroeck 2009, a.o.). I will focus on two points: the nature of criterial features (as opposed to formal ones) and the status of criterial heads.

Criterial features are essentially different from formal (uninterpretable or unvalued) ones. To begin with, topic and focus features are clearly interpretable, even in a technical sense: the feature [focus] can be read at both interfaces, as a chosen alternative of a given set in LF and as specific prosodic pattern in PF, which varies crosslinguistically. The whole Agree system (since Chomsky 1995) relies on the assumption that unvalued or uninterpretable features must be deleted because they are not readable at the interfaces (they are purely formal, syntactic) and this would cause the derivation to crash. If [topic] and [focus] cannot be valued and are indeed interpretable, it makes no sense for them to be necessarily deleted. In fact, this is

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3.   Rizzi widens this cartography in subsequent work (2001, 2004) and the Topic head is argued to be recursive.
4.   Rooth (1985) was the first to propose a syntactico-centric approach to foci, postulating a functional head, FOC, which carries the semantic content of focusing its sister and, at the same time, has phonological content.
5.   See Demonte & Fernández-Soriano (2009), Hernanz (2010), Villa-García (2015) and references therein for cartographic approaches to the Spanish left periphery.

empirically correct: a sentence without focalization or topicalization can be infelici-tous in a given context, but not ungrammatical. In the same vein, criterial features are not primitives, nor can be decomposed in attributes with values (Gallego 2013, 2014 and López 2014). These features can be defined as relational notions, whose meaning depends on the linguistic context, contrary to formal features, which are lexically determined. Considering this difference, it is problematic to assume that criterial features are assigned in the lexicon (as Aboh 2010 explicitly claims). Reinhart (2006) acknowledges this problem and argues that discourse features like [topic] or [focus] are not associated with a lexical item which enters into the numeration, because they are actually properties of an entire constituent, related to the informational status of the whole sentence. Thereby, this information cannot be present in the numeration since it arises from the context. Then, a non-trivial question arises: when and how are those criterial features assigned to the relevant constituents?

The second point of criticism has to do with the category/feature distinction (see Adger & Svenonius 2011), which is eliminated in this framework: topic and focus are features assigned to constituents in the derivation and, at the same time, they qualify as functional heads in the left periphery, which attract those features. The redundancy is obvious and, given that these features are interpretable, seems unnecessary. In addition, the use of criterial heads obscures the distinction between the paradigmatic and the syntagmatic axes, as Gallego (2013) points out. Both lexical and traditional functional categories (Asp, T, C) are paradigmatic, while Topic or focus are syntagmatic. This was precisely Chomsky's (1995) argument to dispense with agreement projections: AgrP has a theory-internal status, given that it is inherently relational, in the sense that it just creates a landing site for case assignment, as TopP or FocP do for topics and foci. In Gallego's (2013: 13) words, criterial heads are emergent categories: "they only appear in a syntactic environ-ment, so recycling them as lexical items blurs the paradigmatic/syntagmatic cut and raises non-trivial questions about the interaction between the syntactic and semantic components." To sum up, the nature of both criterial features and heads poses non-trivial questions for the cartographic framework.

When one talks about the syntactization of discourse, one tends to think of the cartographic project above or of similar approaches that propose, for instance, using speaker and hearer projections (Haegeman & Hill 2013; Speas & Tenny 2003; Wiltschko & Heim 2016). However, there are other proposals that can be considered syntactico-centric due to their use of non-formal features in the deri-vation, even if they do not propose that these features project. This is the case of the so-called move-and-delete approaches to ellipsis (Merchant 2001, 2004; Brunetti 2003; Ortega-Santos et al. 2014; Weir 2014, a.o.). Merchant (2001, 2004), building on Lobeck (1995), claims that ellipsis is a syntactic operation, triggered by a feature. Different heads (C, in the case of sluicing; Foc, in the case of fragment answers) can be endowed with an [E]-feature (see also Bošković 2014), which serves two functions: (i) it instructs PF not to pronounce the com-plement of the head, and (ii) it ensures that both CPs are mutually entailing, by means of a partial identity function over propositions (to capture the well-known

parallelism/identity empirical condition on the antecedent in ellipsis). [E] is not responsible for movement, but displacement is another important ingredient of the analysis, since remnants of ellipsis are assumed to "survive" it by moving out of the ellipsis site. Consider the following example of sluicing, analyzed according to this framework:

(2)   Someone has eaten my lunch, but I don't know [$_{CP}$ who$_i$ [C$_{[E]}$ [$_{TP}$ t$_i$ ~~has eaten my lunch~~]]]

Merchant (2001) argues for further subspecification of the [E] feature to account for the fact that sluicing is only possible in interrogatives, as in (3), and not in relative clauses. In interrogatives, [E] is specified with [wh] and [Q] features, which are strong and uninterpretable and, hence, trigger overt movement, while relative operators lack the [Q] feature. The same argument has been developed to account for linguistic variation: English is supposed to allow VP-ellipsis, contrary to German, because it has an E$_V$ feature (Merchant 2013; Aelbrecht 2010).

Some authors believe that this is not an explanatory theory of ellipsis licensing (Valmala 2007; Ott & Struckemeir 2016; Fernández-Sánchez 2017, a.o.).[6] The [E] feature is a descriptive device and carries some of the problems posed by [topic] or [focus] features. It is true that the [E] feature is not involved in feature-checking *per se* (only its subspecified features do) and it does not project, so the syntagmatic *vs.* paradigmatic problem does not arise. In any case, the question of when this feature is assigned (and why it is assigned only to some heads) remains open. As noticed by Ott & Struckemeir (2016), ellipsis is an optional operation, and this means that the [E] feature is optionally assigned during the derivation, in violation of the Inclusiveness Condition (Chomsky 1995). The same happens with topicalization or focalization: lack of movement does not imply ungrammaticality; the result would only be an infelicitous sentence in a given context. I believe that this is a compelling argument to think that none of these operations are part of narrow syntax alone.

Neither of the two analyses deals with the issue of how the syntax-phonology mapping occurs, in spite of the great impact that both phenomena have on prosody. According to the theory of ellipsis that we have presented, the [E] feature is part of narrow syntax, but its primary function is to instruct PF to silence the complement of some heads. As for the cartographic project, something has to be said regarding the special intonational pattern of both topics and foci.[7] Interface-based approaches have tackled these issues in detail.

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6.   In addition, some empirical problems have been pointed out. In English, focal constituents are not fronted if they are answers to questions, and some elements that cannot be fronted (bare quantifiers or NPIs) can nonetheless surface as ellipsis remnants (Abe 2014; Valmala 2007; Weir 2014; Villa-García 2016).

7.   In this paper, I only deal with foci, but topics present intonational phrase boundaries (Astruc 2004; Feldhausen 2010, a.o.). See Ott (2015) for a non-cartographic analysis of topics that is consistent with their prosodic behaviour.

2.2. Interface-based approaches

Syntactico-centric analyses, aside from the details for the particular constructions, are relatively easy to distinguish by the postulation of non-formal/interpretable features in the syntactic derivation. I believe that a general conceptual criticism to this kind of analyses can target this assumption, so they can be evaluated in general terms. However, the opposite does not hold for interface-based approaches, because they vary greatly among them, even on their assumptions about the architecture of grammar. Therefore, giving an overview of them would exceed the purposes of this paper, even if we focus only on two phenomena, as we have been doing until now. What I want to show in this section is that interface-based approaches are not always conceptually better than cartographic ones. In fact, some of them give rise to other complications: paying attention to the interfaces usually implies a challenge to the Y-model of the architecture of grammar. I will present an important line of research in focalization that has done so and, then, I will show that, by contrast, the interface-based analysis of ellipsis does not challenge the Y-model. The analysis of parentheticals that will be presented in the second part of the paper follows this second line of action: the syntax-phonology mapping has an important role, but there is no need to put forward a radical change in the grammatical architecture.

Most of the interface-based approaches to information structure are based on a distinction between truth-conditional, propositional structure (semantics) and discourse structure (pragmatics), to the extent that they propose an additional level of representation for pragmatic operations: an Information Structure component (Vallduví 1992; Lekakou 2000; Neeleman & van de Koot 2008; Espinal & Villalba 2015), Σ-Structure (Zubizarreta 1998) or Focus Structure (Erteschik-Shir 1997, 2007). In the particular case of focus, there is an influential line of research (going back to Chomsky 1971 and Cinque 1993 who viewed focus as a property defined on PF) that sees the focus of an utterance as a product of the syntax-prosody mapping and the nuclear stress rule, as stated by the stress-focus correspondence (Reinhart 1995):

(3)   The focus of an utterance always contains the prosodically most prominent element of the utterance.

One of the consequences of this principle is that there can be different options to assign focus to a given syntactic element, which may vary among languages, but crucially always depending on interface conditions. For instance, some languages apply a purely phonological operation, stress strengthening, to assign focus to a particular element. Neeleman & Reinhart (1998) argued that this is the case in English, whereas in Dutch happens the opposite: discourse anaphoric constituents scramble in order to facilitate anaphoric destressing (see Samek-Lodovici 2005 for the same proposal for right-peripheral focus in Italian). This kind of proposals (see also Szendrői 2001; Hamlaoui & Szendrői 2015; Samek-Lodovici 2015, a.o.) free syntax from pragmatic features, although they claim that it is sensitive to very specific interface conditions, which can also be debatable. Even more, they have to assume (at least partially) a parallel architecture (Jackendoff 1997).
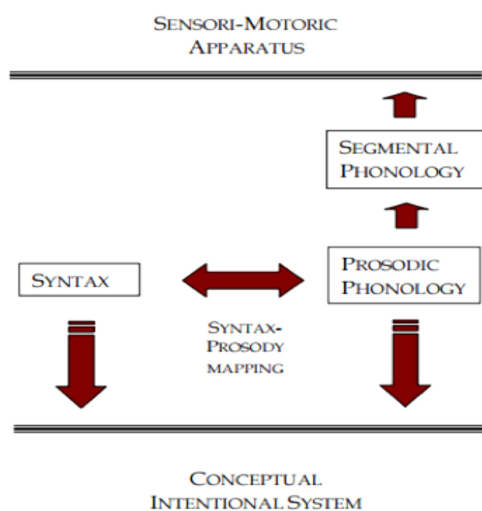
Figure 1. Parallel architecture according to Szendröi (2001).

Szendröi (2001), following Nespor & Vogel (1986), assumes that syntax and prosody are two independent levels of representation, only connected by principles of the syntax-prosody mapping, which means that the prosodic representation is not derived from the syntactic one. The resulting grammatical architecture can be represented as in Figure 1 (Szendröi 2001: 26).

Both syntax and prosodic phonology are supposed to interface with the C-I system, ensuring focus assignment to be a purely phonological process in some cases. The idea is that the possible foci of an utterance are determined by both the syntactic and the prosodic representation.

This view of focus as part of the syntax-prosody mapping is very interesting, because it gives an explanation for its specific prosodic properties. However, the parallel architecture model has a number of theoretical downsides (Irurtzun 2009; Scheer 2011). Despite the descriptive power of such a model, which permits a more flexible interaction among modules, its explanatory power is reduced when compared with the classical Y-model. According to Irurtzun (2009), there are two shortcomings: there is no clear linguistic evidence of such a big interaction across modules, so the system overgenerates; and it is better to restrict the property of recursion only to the syntactic module of grammar (Chomsky, Hauser & Fitch 2002). Scheer (2011: 679) further elaborates on this second point. He claims that allowing for Merge and for trees in phonology or semantics wrongly predicts the existence of recursive structure in these modules and concludes that this fact constitutes a strong argument against a parallel architecture, where all modules access concatenation. The empirical facts are irrefutable: there are no recursive phenomena in phonology. As Irurtzun puts it: "the idea of independent derivations is extremely dubious: what type of phonological representations are we going to build indepen-

dently of syntax? And how are they going to affect syntactic structure building? […] How does the computational system build phonological structures if it does not take as input the output of syntax?" (2009: 153). Jackendoff (1997), the major defender of the parallel architecture model, does not specify how to build phonological phrases independent from syntax, he only poses some correspondence rules that link the two independently built structures in each module. He wants to avoid syntactico-centrism, but his system does not provide an explanation of how the relevant representations that are able to interact are produced. Therefore, the interface-based analysis of focalization that we have briefly reviewed is conceptually problematic because it assumes a parallel architecture of grammar.

By contrast, the alternative analysis for ellipsis does not challenge the Y-model. It consists in viewing ellipsis as a purely phonological operation (Chomsky & Lassynik 1993; Tancredi 1992; Rooth 1992; Hartmann 2000; Ott & Struckmeier 2016; Fernández-Sánchez 2017, a.o). This kind of proposals go back to Chomsky & Lasnik (1993) who claimed that ellipsis is independent from narrow syntax and can be defined as the optional silencing of deaccented material. Deaccentuation applies to backgrounded material, which explains why ellipsis requires a proper antecedent (the elided material has to be recoverable by context). Therefore, the domain of deletion is not a syntactic constituent (contra move-and-delete approaches), but a sort of pragmatic domain, the sentential background. Discourse-new and contrastive elements cannot be part of the background, neither extra-propositional elements, as Ott & Struckmeier (2016) show.[8] One could say that this proposal implies that phonology needs access to pragmatic information, but this does not have to be the case, according to Ott & Struckmeier (2016: 231, fn. 9): "BG [Background] (and only BG) is what can be deleted in the phonological component while ensuring felicitous use of the resulting fragmentary expression; but the mechanisms of phonological reduction are blind to these conditions of use."

There are still questions to answer, but this view of ellipsis seems to be a promising line of research, because it takes the burden out of syntax and, at the same time, avoids changing the canonical Y-model of the architecture of grammar. I will propose something along these lines for the analysis of parentheticals.

3. The case of parentheticals

Parentheticals are a perfect case study to explore the limits between syntax and discourse because even their status as syntactic constructions has been called into question. They are probably one of the constructions that, being a syntactic object (in purely descriptive terms), has received more non-syntactic analyses in generative grammar. The special linguistic properties of parentheticals have led some authors to propose that the relationship that they establish with the clause that contains them (the host clause) is purely discursive (Haegeman 1988; Peterson 1999; Burton-Roberts 2005; Ott 2016b, a.o.). In fact, perhaps the core property of parentheticals is the fact that, despite being linearly interpolated inside another clause, they seem to

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8.   Modal particles in the German middle field survive clausal ellipsis.

be structurally independent from it (Burton-Roberts 2005). They also show special features at the two interfaces: they interrupt the prosodic flow of the utterance, giving rise to the so-called *comma intonation* (Bolinger 1989; Taglicht 1998; Astruc-Aguilera 2005)[9], and they do not contribute to truth-conditional semantics, instead, they introduce speaker-oriented content (see specially Potts 2005).

Nevertheless, it is not easy to generalize when one looks at this kind of constructions because parentheticals are a "motley crew" (Dehé & Kavalova 2007; cf. Kaltenböch 2007 for a comprehensive classification). One of their most salient properties, positional flexibility – which could be related to their syntactic independence – is not found in all the constructions that have been considered to belong to the class. In fact, a distinction must be established between free and anchored parentheticals (Kaltenböch 2007; Kluck 2012). Free parentheticals can appear in many positions inside their hosts (generally between major constituents, cf. Emonds 1973; McCawley 1998; Espinal 1991) and they tend to affect semantically all the proposition.[10] By contrast, anchored parentheticals have a fixed position in the host and, consequently, a determined semantic scope on one particular constituent. Compare the two groups of examples in (4) and (5).

(4) *Free parenthethicals*

    a. Newton's *Principia* – take a seat – was finally published in 1687.

                                                    [interjection]

    b. Einstein's theory of special relativity, I think, was presented in his 1905 paper.

                                   [reduced parenthetical clause/RPC]

    c. The professor made out with – and we all knew that – lots of students at the party.

                                         [*and*-parenthetical]

(5) *Anchored parenthethicals*

    a. Bea kissed Bob, who she has known since high school, at the party.

                          [nominal appositive relative clause/NARC]

    b. Bea kissed Bob, her high school sweetheart, at the party.

                                    [nominal apposition/NA]

    c. Bea kissed someone, I think it was Bob, at the party.

                                   [sluiced parenthetical]

    d. Bea kissed [I think it was Bob] at the party.[11]

                                           [amalgam]

                              [Adapted from Kluck 2012: 1]

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9. Although recently some experimental work has challenged this intuition (see Wichmann 2001; Dehé 2014 and references therein).
10. RPCs can have scope over one constituent of the host if some prosodic and information structure conditions are met (Hedberg & Elouazizi 2015; Kaltenböch 2007).
11. Kluck (2011, 2012) argues that amalgams should be analyzed as sluiced parentheticals, the only difference being the overt/null status of the anchor (but see Cerrudo 2017 for a different proposal).

The examples in (5) could be problematic for those analyses that propose that there is no syntactic relation between parenthetical and host, unless we assume that the adjacency requirement is related to discourse conditions, not syntactic ones (see Ott & Onea 2015 for nominal appositions). I believe that at least the case of amalgams calls for a syntactic integration analysis, given that these constructions fill a gap inside the host (in (5d) the amalgam introduces the direct object of the main verb *kiss*). Amalgams are, in fact, the only parenthetical construction that cannot be omitted without affecting the grammaticality of the host clause.

I will sketch an analysis that captures the differences between both kinds of parentheticals (free and anchored) and, at the same time, solves the conflict between hierarchy and linearity that these constructions give rise to in general. Let me phrase it with a question: if linear order is a product of syntactic structure (given Kayne's LCA), how can parentheticals be linearized with respect to their hosts and, at the same time, be syntactically independent? Before presenting my answer to this syntax-phonology interface question, I will discuss the previous literature on the topic, according to the two categories of approaches for discourse phenomena that I have established in the first part of the paper: syntactico-centric and interface-based.

3.1. Syntactico-centric and interface-based approaches to parentheticals

The analyses for the relationship between parentheticals and their hosts are usually divided in two groups, namely *integrated* and *unintegrated* approaches (in Dehé & Kavalova's 2007 terms). Integrated approaches advocate that there is some kind of syntactic attachment of the parenthetical to its host, while unintegrated ones claim that there is no syntactic relation whatsoever between them. Generally, these two lines of analysis correlate with the two categories that we have been using in this paper. Integrated approaches are syntactico-centric, in the sense that they want to capture this special relationship in syntax and, to do so, they propose new functional projections or even special operations. By contrast, unintegrated approaches tend to be interface-based, in the sense that they appeal to other components of the grammar. As we saw for focalization, both kind of proposals can have theoretical shortcomings.

Ross (1973) proposed the first formal analysis for RPCs and represents one clear example of a syntactic integration approach to parentheticals (see also Emonds 1973 and McClawley 1982). He claimed that RPCs (6a) are derived transformationally from a construction where the parenthetical verb selects the host clause as its complement, as in (6b). According to him, a transformational rule, *Slifting (Sentence-Lifting)*, is responsible from fronting the embedded clause and also from deleting the complementizer.

(6) a. John, I think, is going to pass the exam without trouble.

b. I think [that John is going to pass the exam without trouble].

This proposal fails empirically, since it predicts the existence of connectivity effects between the parenthetical and the host (which do not exist, cf. Emonds 1973; Fabb 1990; Espinal 1991; Haegeman 1988; Burton-Roberts 2005; De Vries 2007,

a.o.) and also that RPCs and fronted embedded clauses should behave similarly, but this is not the case (see Cerrudo 2015, 2016 for some data and discussion).

The transformational analysis was abandoned early in the literature on parentheticals, but Rooryck (2001a,b) goes back to it, adapting the proposal to Cinque's (1999) cartography. He argues that RPCs are evidential modifiers of the host clause and proposes a derivation where the host is base-generated as the complement of the verb (as in the Slifting analysis). The parenthetical verb is supposed to move to the MoodEvidentiality head (to get the linear order of stylistic inversion) and, finally, the embedded CP moves to the specifier of the same projection, as represented in (7).

(7) $[_{\mathbf{MoodEvidP}}$ CP$_i$ (he is going to pass the exam) $[_{\mathrm{MoodEvid}}$ thinks] … $[_{\mathrm{TP}}$ John ~~thinks CP$_i$~~]]

As Rooryck acknowledges, this analysis only works for the cases where the parenthetical appears in final position. It is tricky to derive the interpolation of parentheticals in medial position departing from a transformational analysis, which, in any case, has empirical problems.

The rest of analyses that advocate for a syntactic integrated account propose that the parenthetical is base-generated directly in the position where it is pronounced and that it is related to the host clause by some kind of adjunction procedure (Corver & Thiersch 2002; Matos 2013; Potts 2005). For instance, Potts (2005) claims that parentheticals are adjoined to different syntactic projections, but, crucially, they are teased apart from other type of adjuncts by a *comma feature*. This feature is interpreted literally at PF, as in the analyses of ellipsis discussed in section 2.1, but, contrary to the case of ellipsis, the comma feature is supposed to project. According to Potts, parentheticals are represented in syntax as CommaPs. At LF, the CommaP is interpreted as not-at-issue content, giving rise to conventional implicatures in Potts' terms. Giorgi (2012) pursues a similar analysis, in the sense that she also represents pauses in syntax, but her proposal is even more syntactico-centric. She postulates the existence of two K heads in the left periphery, which represent the pauses at the two edges of parentheticals. Besides, she claims that parentheticals have a fixed position in the clause, as complements of the first KP, and derives the different orders by movement of (part of) the host to the specifiers of both KPs, as represented schematically in (8) for the simpler case (where the parenthetical is in final position).

(8) a. $[_{\mathrm{KP}}$ **K** *parenthetical* $[_{\mathrm{KP}}$ **K** $[_{\mathrm{IP}}$ HOST]]]

     b. $[_{\mathrm{KP}}$ $[_{\mathrm{IP}}$ HOST] **K** *parenthetical* $[_{\mathrm{KP}}$ **K** *e*]]]

So far, I have reviewed some of the syntactico-centric approaches to parentheticals, those based on the postulation of *ad hoc* features or projections. In the same vein, there are some analyses that propose the existence of special syntactic operations to introduce parentheticals in the host clause, while ensuring their syntactic independence (Ackema & Neeleman's 2004 Insertion, De Vries's 2012 par-merge or the innovations in syntagmatic structure suggested by Espinal 1991).

It is interesting to discuss De Vries' proposal, because it has been very influential recently (see Kluck 2011; Griffiths 2013; Griffiths & Gunes 2015; Griffiths & de Vries 2013; Dehé 2014).

De Vries (2007, 2012) claims that parataxis constitutes a primitive in the grammar and, as such, must be represented in syntax. He proposes a new type of merge to introduce paratactic dependents in the syntactic derivation. According to this author, besides the standard Merge operation, which sustains an inclusiveness relation and derives c-command, there is another operation available in syntax called Par(enthetical)-merge. Par-merge only concatenates two elements, without stablishing any kind of hierarchy among them, that is, elements introduced by par-merge are immune to c-command, which would explain why parentheticals seem to be syntactically independent. The fact that some parentheticals can be introduced by conjunctions is taken as proof of the existence of a functional head Par, which is argued to be silent in the rest of cases. Crucially, there are well-established classes of parentheticals that can be never introduced by a conjunction, like reduced parentheticals clauses, non-restrictive relative clauses, sluiced parentheticals and amalgams.[12] Aside from this potential empirical challenge, notice that De Vries' analysis is anti-economic, since he proposes both a new type of merge and a new functional head to account for the special relationship between parenthetical clauses and their hosts.

Kluck (2012) uses this framework to analyze anchored parentheticals in terms of parallel construal (Koster 1999), as opposed to free parentheticals. In anchored parentheticals, the anchor, that is, the element that the parenthetical modifies, is analyzed as the specifier of ParP, which is merged regularly (only the head Par and its complement are par-merged). As a result of analyzing this bivalent ParP as a non-restrictive version of Koster's colon phrase, she proposes that ParP inherits the category from its specifier (as shown in (10) for the example in (9)), like in the case of coordination (Munn 1993; Johannessen 1998).

(9)   I kissed Bill, (who used to be) Bea's husband.

(10)
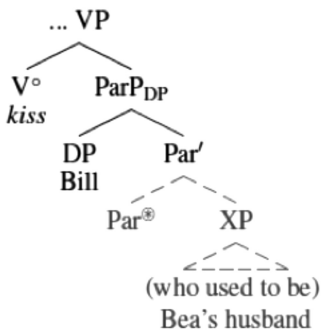
[Kluck 2012: 21]

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12. See Griffiths & Günes (2015) for the existence of a potential parenthetical marker in some constructions in Turkish.

On the other hand, free parentheticals (11) are represented as ParPs without specifier. They are adjoined directly in the position where they are pronounced, as in (12), given that there is no evidence of them being attached to any constituent of the host.

(11) He was, and this is quite typical for Bill, dating several women at the same time.

(12)
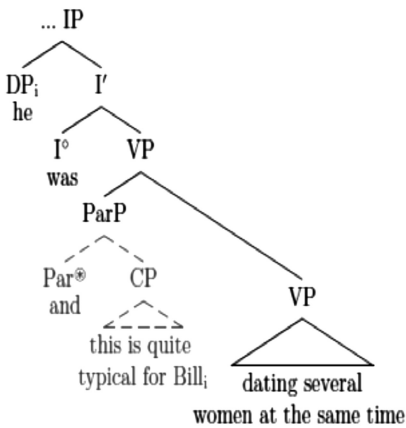
[Kluck 2011: 278]

This analysis has much descriptive power, but it is conceptually very problematic. The argument for the postulation of par-Merge is circular: parentheticals are invisible to c-command because they are introduced by par-merge and par-merge does not imply c-command because this is the core property of parentheticals (Ott 2016a). Following minimalist desiderata, I believe that we should avoid positing new primitives that significantly enrich UG, like par-merge, but also construction-specific functional projections as ParP, CommaP or KP.

The need to promote some special feature or operation in syntax is a constant in the majority of approaches to parentheticals, as I have shown. Nonetheless, there are some examples of proposals that can be considered interface-based, which are precisely those called *radical orphanage analyses* (Heringa 2011). Radical orphanage proposals (Haegeman 1988; Fabb 1990; Safir 1986; Peterson 1999; Burton-Roberts 2005; Ott 2016a, 2016b) assume that there is no syntactic relation of any kind between parentheticals and their hosts. Haegeman treats parentheticals as *orphan constituents*, never adjoined to the host, whose semantic interpretation comes from general discursive principles. Specifically, she proposes that the conjunction in *if*-clauses, which is supposed to be the head of the parenthetical clause, is coindexed with the host clause. However, the full interpretation of the parenthetical is only possible when it is integrated in a pragmatic representation with other propositions, in accordance with general

principles of interpretation (see Ott & Onea 2015 for a more specific proposal along these lines).

The rest of proposals included in this group were designed for non-restrictive relative clauses and appositions. Peterson (1994) claims that the relationship between this kind of parentheticals and their hosts is special and must be distinguished both from subordination and adjunction. According to him, the difference lies in the fact that it is a purely discursive relationship that he calls *attachment* (the analysis is developed in the framework of Dik's Functional Grammar). On the other hand, Fabb (1990) and Safir (1986) argue that the relationship between the main clause and a non-restrictive relative clause can only be captured in a special level of representation: *X'* for Fabb and *LF-prime*, according to Safir. The parallelism of these analyses with the ones that propose new grammatical levels to account for focalization (mentioned in section 2.2.) is evident and I believe that the problems that they encounter are also similar.

As we have seen, both syntactico-centric and interface-based approaches to parentheticals encounter the same conceptual problem, due to their postulation of construction-specific mechanisms to account for the special relationship between parentheticals and their host. I will follow the idea that parentheticals are truly syntactic orphans and that, at least free parentheticals, are only interpreted with respect to their hosts at the discourse level (since they constitute independent root clauses).

3.2. An interface-based approach to parentheticals: Multiple Spell-Out

I assume that parentheticals are syntactic orphans, which technically should mean that they are derived in their own derivational workspace, separately from the host. This conception of parentheticals as truly paratactic dependents poses a linearization problem: if parentheticals are unattached to their hosts, how can they appear linearly inside them? I believe that, following the reasoning above, the interpolation of parentheticals can only occur after Spell-Out (cf. Cerrudo 2015, 2016). Given current assumptions, this seems to me to be the only way to explain their paratactic nature, if one wants to avoid unmotivated categories or operations. This hypothesis can be formalized under some version of cyclic Transfer (Uriagereka 1999 *et seq.*; Chomsky 2000, 2001, 2004). When the operation Transfer applies to a chunk of syntactic structure, it is sent to the two interfaces and eliminated from the derivational workspace. Interestingly for the hypothesis that I am pursuing here, cyclic Transfer has been related to linearization in previous works (Uriagereka 1999; Fox & Pesetsky 2005). In fact, Uriagereka's model can also accommodate the distinction between free and anchored parentheticals. To be more precise, my idea is that there is a correlation between the operation Transfer and the possibility of changing from one derivational workspace to another in syntax (and idea put forth in Uriagereka 1999). Let me introduce the basics of the model before presenting my specific proposal.

Uriagereka (1999, 2002a, 2002b, 2004) develops the Multiple Spell-Out model (MSO), whose major claim is that specifiers and adjuncts must be spelled-out separately in order to be linearized. By contrast, head and complement units can be

linearized without resorting to Spell-Out (until the end of the derivation), because the problem begins when we leave a *command unit* (the space where c-command relations hold without further stipulation, see (13)) in order to derive a complex specifier (or adjunct).

(13) a. ***Command unit****: formed by continuous application of Merge to the same object*

$$\{\alpha, \{\delta, \{\alpha, \{\alpha, \{\beta\ldots\}\}\}\}\}$$
$$\delta \rightarrow\uparrow\leftarrow \{\alpha, \{\alpha, \{\beta\ldots\}\}\}$$
$$\alpha \rightarrow\uparrow\leftarrow \{\beta\ldots\}$$

b. ***Not a command unit****: formed by discontinuous application of Merge to two separately assembled objects*

$$\{\alpha, \{\{\gamma, \{\gamma, \{\delta\ldots\}\}\}, \{\alpha, \{\alpha, \{\beta\ldots\}\}\}\}\}$$
$$\{\gamma, \{\gamma, \{\delta\ldots\}\}\} \rightarrow\uparrow\leftarrow \{\alpha, \{\alpha, \{\beta\ldots\}\}\}$$
$$\gamma\rightarrow\uparrow\leftarrow \{\delta\ldots\} \qquad\qquad \alpha \rightarrow\uparrow\leftarrow\{\beta\ldots\}$$

[Uriagereka 2002a: 46]

Uriagereka proposes two options for specifiers to be related to the main derivation, once transferred. The first option, *conservative Spell-Out*, is the simpler: specifiers are attached normally to the left of the relevant head, but without hierarchical structure, flattened (their terminal nodes being previously linearized), as some giant lexical compound. The second option, *Radical Spell-Out*, holds that linearized specifiers (or adjuncts) are never attached to the main derivation. What lies behind this claim is the intuition that parallel workspaces may not been intertwined in syntax in some cases.
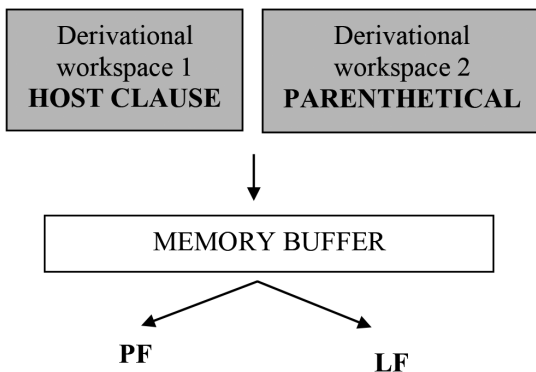
I believe that these two linearization options can be applied straightforwardly to the analysis of parentheticals and capture the distinction between free and anchored parentheticals. Anchored parentheticals can be analyzed through conservative Spell-Out: they are derived separately and transferred, but, then, they are adjoined to their anchor in the main derivation.[13] Under this analysis, we can ensure their opacity while, at the same time, warrant their semantic scope: the fact that they only modify the constituent of the host to which they are attached to (the anchor). By contrast, the radical Spell-Out option is suitable for free parentheticals, those that can appear in many positions of the host and, nonetheless, tend to modify the whole proposition (in a discourse level). Free parentheticals are transferred separately, like anchored ones, but they do not merge into the main derivation; their linear integration occurs only at PF instead.

There is one potential caveat for this analysis, the so-called *Assembly problem* (Dobashi 2009): how can the system establish the order between the transferred chunks? In fact, this is a problem for any version of cyclic transfer (including

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13. Anchored parentheticals always appear to the right of their anchor (the constituent that they modify), which seems to force us to use right-adjunction. However, notice that regular adjuncts of the VP tend to appear linearly in final position too. This general issue deserves further research.

Chomsky's phase theory). One possible solution is the postulation of a memory buffer mediating between syntax and the interfaces (Uriagereka 1999). The idea is that transferred material does not go to the two interfaces right away, it is stored in a computational space instead, whose only function is loading all the transferred chunks until the whole derivation (of every workspace) has come to an end, as depicted in (14).

(14)

```
┌──────────────────┐    ┌──────────────────┐
│   Derivational   │    │   Derivational   │
│   workspace 1    │    │   workspace 2    │
│  HOST CLAUSE     │    │  PARENTHETICAL   │
└──────────────────┘    └──────────────────┘
                 │
                 ▼
         ┌────────────────────┐
         │   MEMORY BUFFER    │
         └────────────────────┘
            ↙            ↘
         PF                LF
```

I assume that the order of arrival to the buffer matters for linearization. In a standard bottom-up model, this would mean that we have a "last-in, first-out" situation, that is, what is stored first is pronounced last. The need of some stipulation to maintain the order after Transfer (a mirror-image of the derivational history) is crucial for any theory of cyclic Transfer, but even more for the cases we are dealing with, where the system must keep track of two different derivational workspaces, each with its own cycles. Under this framework, the linear order between parenthetical and host is a timing issue, it depends on the order of Transfer of the relevant chunks of each workspace (cf. Cerrudo 2016 for a complete derivation step by step).

Let me sum up the key features of the proposal. The basic idea is that the parenthetical and the host clause are derived in different workspaces and can get intertwined through Transfer. Under the MSO framework, parallel workspaces can cross their paths after Spell-Out of both workspaces (radical Spell-Out), which is the case of free parentheticals, or after Spell-Out of the parenthetical clause (conservative Spell-Out), which is then adjoined to a particular constituent in the host, in the case of anchored parentheticals. The analysis explains straightforwardly two salient properties of these constructions: syntactic opacity and positional flexibility. Syntactic opacity is caused by the parenthetical being linearized prior to any interaction with the host and positional flexibility is expected if the two derivations are generated separately and can cross their paths at any time in the derivation during the cyclic process of Spell-Out (even though there could be some restrictions, see Cerrudo 2016). This framework could explain the general restrictions on the niches for parentheticals in the clause, but a complete theory should take into account all

kinds of pragmatic or contextual factors. For instance, compare (15) and (16) with two different examples of parentheticals introduced by conjunctions, one with more positional flexibility than the other.

(15) a. Peter made a cake – or cookies (I don't remember) – for the birthday party.

     b. Peter made a cake for the birthday party – or cookies (I don't remember).

     c. #Peter – or cookies (I don't remember) – made a cake for the birthday party.

     d. #Peter made – or cookies (I don't remember) – a cake for the birthday party.

(16) a. Peter – and this is good news – made a cake for the birthday party.

     b. Peter made – and this is good news – a cake for the birthday party.

     c. Peter made a cake – and this is good news – for the birthday party.

     d. Peter made a cake for the birthday party – and this is good news.

There are some important descriptive differences between the parentheticals in (15) and (16). Firstly, in (15) the parenthetical is a non-sentential fragment, and can be analyzed as an elliptical version of a sentence parallel to the host clause (*Peter made cookies for the birthday party*). Secondly, it introduces a disjunction with respect to one specific lexical item of the host clause (*cake*), contrary to (16), which is a mere addition without any contrast. It seems that this second difference is responsible for the positional restrictions shown in (15); the disjunctive parenthetical can only appear after the first element of the disjunction is introduced. I believe that this restriction has to do with the pragmatic properties of disjunction, and, thus, it does not belong to the domain of syntax. This is only one example of how different principles of discourse organization affect the distribution of parentheticals (see Ott & Onea 2015 for nominal appositions), but I believe that a careful examination of this kind of data should be one of the priorities on the research agenda if we want to build a complete theory of parentheticals and, at the same time, gain new insights about the syntax-discourse interface. On the other hand, one could also view the contrast above as a requirement on the antecedent of the elliptical parenthetical, but, under this perspective, the antecedent would be the string of the host clause preceding the parenthetical and not the entire host clause, as it is usually assumed (Ott 2016b; Stowell 2017; Ott & Onea 2015). In any case, the study of ellipsis in parentheticals is another fruitful research field (see specially Döring 2015) and deserves further attention. For instance, assuming that all parentheticals have a hidden clausal structure (as proposed in Döring 2015) has one welcome consequence: their prosodic isolation receives a natural explanation, since it is standard to assume that (root) CPs are mapped into intonational phrases in the syntax-phonology interface (Nespor & Vogel 1986; Selkirk 1981 *et seq.*; Truckenbrodt 2015).

The analysis pursued here is also consistent with this conclusion if we believe that there is a correlation between Spell-Out and the mapping to phonological structure. Some authors have proposed that Chomsky's phase theory and Uriagereka's MSO should be combined if one wants to derive domains for morphophonologycal application directly from transferred chunks (Dobashi 2003; Newell 2008; Samuels 2009; Sato 2012). There is a lively debate about these matters in the syntax-phonology interface field, in which parentheticals have been an important cornerstone. I believe that the hypothesis for parentheticals presented above is a good line of research to check the predictions of different theories about important issues such as linearization, the nature of Transfer and the existence of cycles, both coming from the phonologically-oriented and the syntactically-oriented literature.

4. Conclusion

This paper started with the observation that the study of discourse phenomena could be a promising research field to investigate the limits between syntax and the interfaces. In the first part of the paper, it was made clear that depending on the theoretical position that one adopts about the role of syntax in grammar, the enterprise mentioned above cannot be entertained. Assuming that syntax has to encode every single aspect of linguistic phenomena leads us to a syntactico-centric trend, which provides a framework to analyze all kinds of constructions in a unified manner (following the logic of the cartographic project), but poses non-trivial questions about the nature of features and functional heads, as we saw specially for the case of focalization, and also for ellipsis and parentheticals. On the other hand, interface-based proposals are not exempt of problems either, since some of them challenge the Y-model of the architecture of grammar – as was shown for focalization –, which is undesirable in both theoretical and empirical grounds. One important conclusion is, then, that interface-based approaches are not always superior to syntactico-centric ones. However, they are always interesting because they force us to think about what the role of the different components of grammar is.

It is difficult to determine *a priori* when it is theoretically sound to add a new feature or functional head or even to propose a new operation to accommodate some empirical facts (as Par-merge for the case of parentheticals). Following minimalist desiderata, the best would be to keep new features and operations to the minimum and try to solve the empirical puzzles with the pieces that we already have. I tried to follow this line of action pursuing an interface-based approach to parentheticals, rooted in the intuition that these structures are truly syntactic orphans. The analysis does not need special mechanisms, it is only necessary to accept that syntactic derivations are transferred cyclically to the interfaces. Although it was only a sketchy hypothesis, I believe that it is one good example of the potential that looking at the interfaces has when dealing with discourse phenomena.

I have focused only on the syntax-phonology interface, but of course the semantic/pragmatic side should also be taken into account seriously if we want

to have a comprehensive view of the phenomena under study. In any case, the purpose of this paper was quite different from that. Beyond comprehending the linguistic phenomena *per se*, I wanted to show that looking at discourse phenomena is exciting because it can help us understand better what is the nature of the interfaces.

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